Industrial Equipment News

FOUNDED 1933

ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 10704**

Marking - Flexible plastic, contrasting core and surface colors

Source: HERMES PLASTICS INC.
13 University Place, Dept. IEN, New York 3, N. Y.

Gravoflex

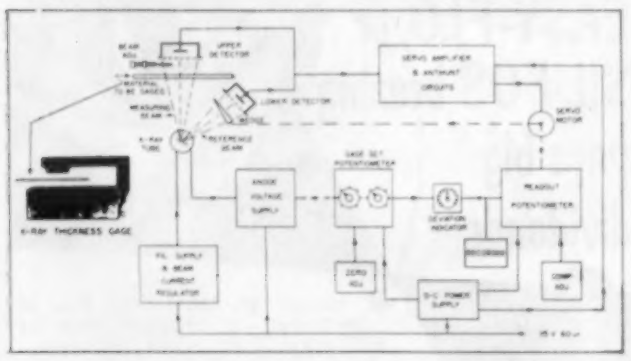
Sheets, strips, cut pieces in specified dimensions, are available in thicknesses measuring 1/32, 1/16 or 1/8 in. in this new flexible laminated marking material. It can be cut with scissors, a paper cutter or a metal shear. Its edges will not chip and do not require beveling. It can be nailed without predrilling. It also can be stitched or stapled or adhered to a surface. It is scratch proof, weather proof and stain proof. It is tough but can be bent by hand.

Characters are made to show by means of engraving, or other method, to cut through the outer surface and expose the inner core. Two color combinations are available. These include a black surface with a white core and a white surface with a red core. No subsequent painting is required and the marking will not be distorted by bending or forming.

If you write maker identify as **IEN - 10705**

Gage - Electronic equipment reads thickness in a moving strip

Source: PRATT & WHITNEY
Charter Oak Blvd., Dept. IEN, W. Hartford 1, Conn.



Also can be employed for control

Aluminum foil down to 0.0003 in. in thickness and steel strip to 0.075 in. can be measured without physical contact and a reading produced while the material is in motion between the upper and lower portions of the gaging head. A recorder can be added to the circuit. A control unit is available also that employs the gage reading to make required corrections in the rolling action ahead of the gaging point.

The gage directs a split X-ray beam, partly through the material and partly through a wedge-shaped disc. The disc varies in thickness equal to the range of the gage. As the material moves along, any difference in thickness between the wedge and the material will equalize a bridge circuit by revolving the wedge and thus produce the reading equivalent to the thickness change.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10706**

Purchasing Guide - Available free to Industrial Equipment News readers

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

Free upon request

We are happy to report availability of an additional limited number of copies of Thomas' Register Junior, following our initial announcements in July and August. We hope to start mailing this month and suggest that you request your free copy if you have not done so already.

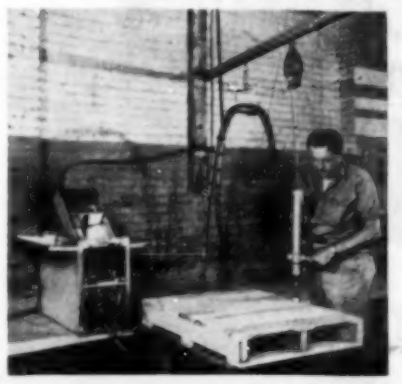
The 1,500 page, 6 by 9-in. book is a companion publication to the regular annual edition of Thomas' Register. It contains some 50,000 selected product headings and selected manufacturers under each head. It is designed primarily for use by plant men.

TO YOUR COMMUNITY CHEST

If you write maker identify as **IEN - 10707**

Nailing - Pneumatic equipment feeds and drives 4 D to 8 D nails

Source: MORGAN MACHINE CO.
1164 University Ave., Dept. IEN, Rochester 10, N. Y.



Drives in any position

One operator can drive 40 to 50 nails per minute, for sustained periods and about 60 nails per minute, in brief spurts, with this new Morgan Portable Nail Driver. Operation is on compressed air at 80 to 90 lb. with air consumption of 14.7 cfm. during the operating intervals. Each nail is driven with a single recoil free stroke of the tool. It can be driven flush or countersunk. It can be clinched by using an angled nose piece on the barrel and driving against a steel back plate. The driver is operated by depressing the barrel against the work and pulling a trigger. A safety device prevents trigger release unless the barrel is fully depressed.

An oscillating hopper, mounted on the feeding mechanism to which the shop air line is attached, holds 8 lb. of nails. It delivers these nails, correctly aligned, through a plastic hose to the driver. As each nail is driven another one is automatically brought into position. The standard feed hose length is 25 ft. but operation can be maintained satisfactorily on lengths to 50 feet. The feed unit mounts on a bench or in any convenient position adjacent to the work area.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

OCTOBER, 1954
VOL. 22 No. 10

PRODUCT FINDING INDEX

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

ABRASIVES 33
Adhesives 95*, 104*
Alloys 9, 19, 41, 78*
Aluminum 20*, 29, 78*

BALANCING 97*
Band Saw Guides 10
Barriers, Parking Lot....109
Baskets 20
Batteries 78*, 115*
Battery Chargers 66
Bearings....2, 7, 35, 36*, 41, 48, 65, 76, 78*, 104, 109
Bellows, Metal 40, 42
BELTS
Conveyor 69, 74, 106
Dressings 76, 106
Transmission....3, 65*, 70
BENCHES 20, 35*
Tops 8, 63
Bending 6, 11, 12, 77, 82, 88, 97, 100, 115*
Bins 19, 30*, 108*
Blowers & Fans 8, 21, 37, 53, 70, 78*, 87, 94, 120
Boilers 13*, 40, 117
Bolts....5, 49, 51, 60, 71, 105
BOOTHS, Paint Spray....44, 55
Telephone 68
Boring 103
Boxes 14*, 30, 32*, 52, 61, 68, 105, 107
Brakes 5, 15, 69*
Brazing 2, 68
Broaching 21*
BRONZE 9
Buckets, Clamshell 99
Buildings 6, 25*, 35, 51, 67*, 70, 72, 78*, 99
Burring 16, 44, 54, 94, 108

CABINETS 4, 45, 99*
Cable, Electric 3, 13, 15, 24, 87, 118
Calculating 25
Cans 54
Carbide Parts 15*
Carbon Parts 45*, 60
CARS 61, 92
Door Operators 22
Casters....38, 65*, 83, 90, 93
Castings 20*, 72, 98
Cement, Iron 26
CHAIN
Bead 78
Fittings 39*
Chairs 79
Chucks 7, 72, 85, 104
Circuit Breakers 57*, 103
Circuits, Electric 78*, 79*
Clamps 7, 9*, 23*, 38, 55*, 55, 56, 68*, 75*, 80, 82
CLEANING
Blast 43, 54, 63, 79*, 93, 95*, 113*
Blower 8, 21, 53, 94
Floor 22, 70, 72
Materials 26, 42, 44*, 44, 55, 69*, 107, 108, 110*, 111, 113, 117
Rotary 61, 68
Spray 29*
Tube 25
Ultrasonic 2*
Vacuum 21, 36, 43, 44*, 53, 71, 91*
Washing 55, 77*, 79*, 90, 109*
Clothing, Protective....57*, 79*
Clutches 45, 67*
Collars, Shaft 115
COLLECTORS, Fume 9
Vapor 96*
Communicating 8*, 16*, 53, 68, 116
Comparators 109
Compressors....8, 9, 20, 23, 37
Condensate Return Equipment....18
Conductors, Electric 3, 10, 13, 15, 24, 87, 118
Conduit Fittings....7, 41*, 52, 111
Connectors, Electric 29, 31, 39, 65, 74, 79*, 82, 98*, 104
Construction....63, 77, 98, 107*
Contactors 20
Contacts, Electric....62, 65*, 94
CONTROLS
Combustion 33, 41
Electronic 20*
Liquid Level 30
Machine Tool 89*
Motor 11, 12, 15, 53*, 84, 85*, 88
Overload 97
Positioning 3*, 35, 55, 105
Pressure 12*, 45, 52, 55, 83
Process 79*, 97, 107
Production 18
Temperature 34, 63*, 76*, 83, 92, 98, 103*, 103, 107
Voltage 81*
CONVEYING
Belt 60, 68, 69, 71, 74*, 74, 104, 106, 111*
Chain 14
Overhead 6, 22*, 46*, 47, 84, 114
Pneumatic 49*, 56
Roller....6, 7, 44, 62*, 87*, 111*
Screw 118
Vibrating 31
Wheel 3*, 120
Cooling Elements 21, 108*
Corrosion Proofing 60*, 60, 81, 98, 103
Counting 24, 70*, 93
Couplings, Shaft 19, 42, 46, 52, 79*, 114*
Covers, Dock 36, 94
CRANES..33, 35, 36, 77*, 79*, 101*
Brakes 15
Creams, Hand 76
CUTTING
Abrasive 23, 110
Flame 115
Machines 47, 56*, 79*, 91
Tools 5, 43, 44, 90, 93, 102*, 103, 108
Cylinders, Power....9, 22, 37*, 38, 46, 73*, 74, 79, 80, 98

DEGREASING 55, 107
Demagnetizing 94
Detectors, Metal 5
Die Castings 62
Disinfecting 14, 44*
Dispensing....21, 24, 26, 74
Dockboards 10*, 33*, 100
DOORS 14, 52*, 68*
Hardware 88
Operators 22
Drafting 3, 80*

DRILLING
Attachments 26*, 48
Heads....21, 50, 59, 91, 100
Jigs 14
Machines 26*, 93*, 106
Tools..6, 15, 59, 62, 96, 107, 116
DRIVES
Adjustable Speed 13
Components..3, 19, 21*, 34, 42, 43*, 45, 46, 52, 60, 65*, 67*, 68*, 69*, 70, 78, 80*, 80, 86, 95, 97, 114*, 117
Speed Reducer 13, 16, 28*, 28, 32, 42, 48*, 53, 81*, 82, 101, 110
Variable Speed 5, 7*, 11, 21*, 26, 36*, 58, 80*, 91, 98*, 100*
Drying 3, 22, 32*, 34, 37*, 50, 58, 82, 84, 85, 93, 96
DUCT, Electric 42*, 80*
Ventilating 46*, 79
Dust Collecting 7, 14, 26, 40, 47, 55, 56, 80*, 94*, 97, 101
Dynamometers 80*

ELECTRONIC PRODUCTS 21*, 45, 74*, 80, 82*
Elevators 28, 29, 57*, 64, 67, 82*, 118
Engines 89*
Engraving 77
Envelopes, Shop 30
Equipment 82*
ETCHING 75
Expanding 83
Expositions, Industrial 36
Extinguishing....2, 16, 35*, 51, 55*
Extracting 113

FABRICS 43*, 62, 73, 116
Fans & Blowers....8, 21, 37, 53, 70, 78*, 87, 94, 120
Fastening Tools 24
Fastenings 5, 9*, 9, 12, 19*, 21*, 27*, 33*, 39*, 45*, 46*, 49, 51, 52, 58, 60, 67, 68*, 69, 71, 74, 76*, 77, 95*, 95, 97, 105, 112, 113, 114*, 115, 117
Faucet Repair Parts 12
Feeding 21, 24, 37*, 41, 49, 61, 103
Fence 48, 94
File Sharpening Service 105
Filing 60
FILTERING, Air 32, 45, 61, 73, 84, 94*
Liquid 34*, 39, 45*, 77, 95, 108, 112, 115
Floats 103
Flock 8
Floors 10*, 33*, 36, 46, 50, 54*, 58, 71, 90, 92, 100, 117, 118, 120
Forming 10
Furnaces 48, 58*, 83
Furniture....8, 20, 35*, 63, 79, 82*
Fuses 22

Reader Service Form....16, 104
Useful Information....20
New Literature....78
Ideas For You....60
Index to Advertisers....118
"I Wish I Had"....120

GAGES
Dimensional 1*, 25, 26*, 27, 43, 47*, 49, 53, 61*, 64, 85, 102, 109, 120
Pressure 82*, 99
Strain 67
Surface Roughness 72*
Tension 96*
Gaskets 74, 82*
Gear Cutting 33
Gears....34, 80, 82*, 117
GENERATORS, Electric..79, 96, 114
Steam 40, 117
Glass 75
Gloves 15, 38, 96
Goggles 27, 37
Grabs 55
Grating, Floor 36, 46, 50
GRINDING
Machines 66
Tools....27, 75*, 109
Wheel Dressers 7, 40*
Wheels..69, 82*, 84*, 89, 97, 119
Guides, Purchasing 1*

HAMMERS 16, 52, 56
Handles 35*, 65
Handling....19, 29, 30, 32*, 38*, 39*, 52*, 54*, 55, 56, 61, 68, 84*, 99, 107, 116*, 116
Handwheels 65
Hardboard 100
HEADS, Drill....21, 50, 59, 91, 100
Tapping 92
Heat Treating 6, 48, 52, 83
HEATING
Elements 5, 11, 16, 18, 21, 50, 72*, 87, 108*
Flame 75, 86, 99
High Frequency 94*
Liquid 62*
Oven 14*, 55
Paint 86
Process 32*
Space 51*, 81, 84*
HOISTS....9, 56*, 76, 81, 93*, 95
Drives 66
Honing 7*
Hoppers 54*, 61, 64
HOSE....46*, 70, 79, 84*, 91*
Fittings....30, 44, 75*, 86
Metal 10, 68, 87

INDEXING....40, 43*, 71, 72, 84*
Indicators, Temperature 106
Ink 17, 48*
INSULATING, Electric 51, 56, 58*, 60*, 91, 106
Thermal 57
Vibration..12, 22*, 53*, 95, 111

JACKS....2, 13, 35, 39, 61, 82
JOINTS, Pipe 67
Shaft 68*, 86

(Continued Over)

FOR ROUTING to others in your plant interested in product information

- ☐ *Plant Operating, Mr.* .....
- ☐ *Production, Mr.* .....
- ☐ *Engineering, Mr.* .....
- ☐ *Product Design, Mr.* .....
- ☐ *Purchasing, Mr.* .....
- ☐ .....

KEYSEATING 112

LABELS 24, 26, 84*, 115
Ladders 20, 78
Laminates 42, 47, 53, 70
Lamps 33, 73
Lapping 69, 95
Latches 45*, 52, 58, 69
LATHES 37, 87, 98
Attachments 84*
Tools 43, 90
Layout 57, 65
Lighting 17*, 17, 33, 73, 104, 106*
Loading 52*, 77, 94*
Lockers 15*
Locknuts 39*, 46*, 76*, 95*
Locks 85*
LUBRICATING Equipment 27, 45, 57, 72, 86*, 115*
Materials 3, 4, 80, 102

MACHINE PARTS 86*
Machining 21, 23, 76*, 91*, 102*
Magnetic Cores 86*
Magnets 9, 60, 82, 120
Magnifying 20, 55
Management 22*
Mar Proofing 69*
MARKING Equipment 5, 7, 18*, 42, 58, 77, 94, 110*
Materials 1*, 17, 26, 41, 48*, 112*, 115
Masking 75
Matrix Materials 19
Melting 9, 66*, 72*
METAL
Data 3
Parts 19, 54
Spraying 112
Treating 42, 66
METALS
Design Strengthened 7, 9*
Expanded 64
Laminated 35, 53
Perforated 56
METERS
Air Velocity 46
Electric 21, 25*, 63
Electronic 40*
Liquid 101
Microfilm Equipment 20, 59
Microscopes 86*, 120
MILLING Cutters 54, 93
Machines 33, 89
Mixing 109*
Molybdenum 4
Monorail 6
Motor Brushes 62
MOTORS, Electric 15, 16, 19*, 28, 33*, 63, 102, 110
Pneumatic 20, 75
Mufflers 101*

NAILING 1*
Nails 74
Nameplates 24
Nozzles 23
Numbering 66
Nuts 19*, 49, 51, 60, 71, 76*, 112

OIL CONDITIONING 39
Ovens 14*, 22, 34, 50, 52, 55, 82, 96

PACKAGING
Containers 86
Equipment 10, 24, 28, 45*
Materials 62, 65
Packings 20, 51, 86*, 99
PAINTING Equipment 44, 57, 86
Materials 7*, 13*, 29, 43, 113*
Pencils 3
Periscopes 32, 86*
Pins 49, 67, 95
PIPE 22*, 97
Coils 21, 108*
Fittings 32, 38, 39, 67, 77, 78, 86*, 119
Fittings, Jacketed 89
Jacketed 89
PLASTICS
Materials 1*, 47, 66, 86*, 88*, 105, 111
Molding Equipment 88*
Products 25*, 35, 70, 86*, 106, 107, 116
PLATES, Floor 58, 71
Surface 65
Wear 9, 35
Plating 25, 44*
Plywood 42
Metal Faced 70
Polishing 16, 42
Powder Metal Parts 112
PRESSES
Attachments 41, 47, 49
Mechanical 30, 88*, 102*
Tools 34*
PRINTING Equipment 30*, 59, 83*, 85*, 92, 94
Materials 30*, 39*, 64*, 88*, 92
Processing 41*
Projecting 49
Protecting 15, 17, 27, 36, 37, 38, 57*, 76, 88*, 94, 96, 113
Pulleys 60, 95
Pulling 13, 35, 61
Pulverizing 56, 101
PUMPS
Centrifugal 18, 31*, 32, 63*, 78, 83, 88*, 112*
Condensate 18
Hand 24
Hydraulic 48, 90*
Metering 21, 61
Pneumatic 27, 52
Rotary 11, 117, 119
Turbine 17
Vacuum 20
Punching 77, 89
PYROMETERS 80, 97
Supplies 90*

RACKS 13, 19, 29, 61, 104*, 116*, 116
Ramps 54*, 64
Record Keeping 18, 30*, 59
Recorders, Production 50
Recording Instruments 25*
Rectifying 12*, 90*, 101, 102, 110*
Reducers, Speed 28*, 32, 42, 48*, 53, 81*, 82, 90*, 101
Reeling 68
Reels 3, 47, 49
Refractories 41, 115
Refrigerating 103*
REGISTER, MANUFACTURERS' 50*
Relays 58, 70*, 78, 84, 96*, 104
Respirators 17
Retrieving 3
Rheostats 11, 30
RINGS, Piston 84
Retaining 27*, 71, 77
Riveting 12, 101
Rivets 12, 49, 71, 74
Rock Drilling 90*, 103
Roofs 22*, 70*, 119
Rubber Products 15, 72, 79, 106, 110

SANDING 119
SAWING Machines 8*, 10*, 49, 59*, 60*, 90, 115
Tools 96, 107
Scaffolds 25, 38, 61*, 62, 67, 109, 113
Scales 64*, 67, 73
Screening 65, 75
Screw Driving 18*, 31, 94
Screw Machine Parts 53
Screws 5, 9, 49, 60, 71, 74, 97, 105, 112, 113
SEALING Components 39, 51, 58, 61*, 99
Materials 20, 26, 74, 109*
Separating 3, 4, 78, 85, 93, 101*, 109
Sewing 28
Shafts, Flexible 55
Shearing 34, 48*, 74*, 77, 102, 112
Shelving 27, 75, 76
SHIPPING 24*, 38*
Shovels, Power 52*, 56, 77, 94*
Shredding 57
Signaling 39, 42*, 71*, 84, 89, 90*, 99*, 113
Signs 10
Skids 61, 68, 107
Slitting 56*, 102
SNOW PLOWS 8*, 33, 40, 69, 110*
Soldering 90*, 113, 114
Solenoids 5, 104
Solvents 107, 111*
Spraying 23, 57
Stampings 22, 46, 90
Stapling 62*, 63, 72, 75*, 110
STEELS 5*, 6, 19, 35, 38, 54, 76, 90*, 99, 104
Stokers 51*
Stopwatches 102
Storing 4, 13, 14*, 15*, 19, 27, 30*, 30, 45, 54, 61, 75, 76, 92*, 99*, 104*, 105*, 107*, 108*
Strapping 26, 49, 57, 92*, 100*, 101, 116*
Striping 94
STRIPPING 19*, 25, 47, 61*
Stroboscopes 2*, 80
Stud Driving 24, 40
Surplus 4
Sweeping 60
Switches 11*, 12*, 17, 18, 30, 36, 44, 52*, 88, 106*, 111, 114, 115, 116

TABLES 20
Machine 43*, 71
Tachometers 50, 59, 105
Tackers 63, 72, 110
Tanks 4, 23, 107*
Tapes 30*, 34*, 41, 43, 57, 65, 69*, 73, 91, 92*, 106
TAPPING Heads 92
Machines 31
Telescopes, Industrial 32, 70
TESTING
Abrasion 64
Dust 81
Electric 13*, 21, 24*, 28, 63
Electronic 5, 36*, 104*, 112*
Engine 27*, 97*
Gas 18
Hardness 5*, 8, 17*, 46, 64
Light 92*
Metal 58*
Performance 47*
Stiffness 64
Tension 108
Ultrasonic 5*
Vibration 28*
Thermometers 39, 80, 120
THREADING Heads 92
Machines 31, 51
Tools 56*
Timing 20, 34, 73*, 78, 98, 100*, 102, 114
Tinning 120
Tires 29, 86, 88
Tissues, Wiping 44
Tools, Hand 10
Torches 6, 75, 86, 89*, 99
TRACK 12
Tractors 31*
Trailers 61
Tramrail 47
Transducers 10*, 23*, 105
Transfers, Ball 7
Transformers 49*, 66, 89
Traps 4, 11, 13, 38*, 73, 110*
Trolleys, Monorail 46*, 66
TRUCKS
Attachments 28*, 58*, 108*
Hand 11*, 16, 59, 92*
Hand Lift 50, 81, 91
Power Lift 13, 18*, 23, 24*, 66*, 82, 100, 102*, 114*
Power Units 96
Tractor 31*
Trailer 61
TUBES 39, 54, 73*
Finned 18
Fittings 30, 58
Flexible 10, 68, 87
Tumbling 33

UNDERCARRIAGES 41*
Unions, Pipe 32, 78, 119

VALVES
Blowoff 14
Line 4, 8, 24, 28, 31, 42, 47, 48, 54, 62, 65, 71*, 73, 78, 79, 87*, 98*
Operating 6*, 18, 29*, 37*, 42*, 59*, 69, 105, 119
Operators 92*
Power Operated 8, 32, 37, 38, 40, 51*, 83*
Regulating 45, 55, 92*, 92, 98, 103
Relief 18
Repair Parts 12
Ventilating 6*, 70, 79, 85
Vibrating 76
Vibration Isolators 12, 22*, 53*, 84*, 95, 111
VISES 19, 81, 105*, 107
Jaws 40*

WASHERS 33*, 112
Washrooms 26, 37*, 108
Wax 54*
Watchclocks 34
Water Treating 81
Weighing 45*, 47, 64*, 67, 73, 112*
WELDING
Arc 16*, 108, 113*
Flame 6, 89*, 92*, 99, 106*
Materials 11*, 38
Positioners 37
Pressure 77
Resistance 88, 101*
Service 56
Wheels 24*, 28, 29, 38, 48, 83
Winding 10, 56*, 66*, 102, 114
Wire Cloth 85
WIRE, Magnet 10
Parts 46, 110
Staple 46
WIRE ROPE Fittings 56, 67
Slings 34, 45, 87
Wood Working 8*, 25*, 49, 60*, 62
Wrenches 10, 31, 32, 64*, 94

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If you write maker identify as **IEN-10708**

Stroboscope - Flashing light "stops" vibration at synchronous speed

Source: BENDIX AVIATION CORP.
Dept. IEN, York, Pa.

Trouble finder

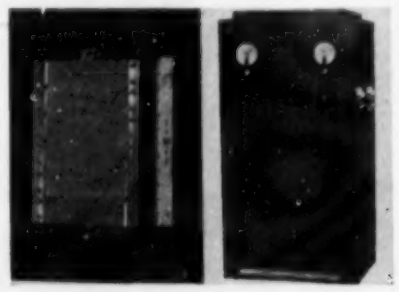
Flash-Lok trade names a new electronic instrument to operate a Type 1D21 flash lamp mounted in a cord equipped reflector. The instrument can be set to flash the lamp at any speed between 30 and 2,000 cps. to synchronize with the shock or vibration frequency to be studied. The effect is to "stop" the vibration so its action can be seen clearly. A difference frequency of either 1 or 5 cycles is maintained automatically. The operator can observe slow motion, just off the synchronous speed, or fast motion for general resonance detection. The light flashes also can be locked exactly to the vibration frequency.

Excitation is by electrically driven vibration equipment or from an accelerometer attached to mechanical equipment. Dimensions are about 8 by 12 by 9 inches. Operation is on 110-volt ac. Equipment includes one 1D21 lamp, reflector, cord and plug which can be stored in the housing when it is not in use. There is provision for a second lamp and a jack is supplied to connect a white light source for additional brilliancy. Assembly weight is 21 pounds.

If you write maker identify as **IEN-10709**

Cleaning - Ultrasonic generator and transducer to agitate a solvent

Source: BRANSON INSTRUMENT INC.
430 Fairfield Ave., Dept. IEN, Stamford, Conn.



Speeds metal cleaning

Cleaning action of a solvent is accelerated by application of this new ultrasonic equipment to remove soil, embedded dirt, tiny chips from crevices, blind holes as well as exposed surfaces. The new 2-kw. unit represents further development and increase in size compared to the similar equipment previously described IEN-3652-54. Output from the generator is fed to the barium titanate transducer immersed in the solvent. The transducer converts the 100,000-cycle radio frequency into mechanical vibration. This vibration acts invisibly through the solvent to shake the soil loose.

The generator has sufficient capacity to drive a transducer presenting 70 to 100 sq. in. of vibrating surface or several smaller units of equivalent area. The transducers can be employed in a solvent tank of any size. Large work pieces can be cleaned by moving them over the active transducer area. Overall dimensions of the generator are about 23 by 18 by 43 inches. Weight is about 350 pounds. Operation is on 110 or 220-volt ac. input. A motor-driven blower prevents overheating.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-10710**

Do you know about the new power jacks? The remote controlled hydraulic jacks? Jacks that lower loads automatically, safely and quickly? Do you know how to select the right jack for the job at hand? How to instruct workmen on the safe use of jacks and how to keep jacks in good working order? Duff-Norton, the world's oldest and largest manufacturer of all types of lifting jacks for every industrial use, has just published a new 40-page, illustrated jack manual—the most complete encyclopedia on the subject of lifting jacks ever attempted. This new manual contains complete specifications on more than 300 different types and sizes of ratchet, screw, and hydraulic jacks from 3 to 100 ton capacities, both manual and power operated. It contains 40 pages of useful information that will enable you to get lifting, lowering, pushing and pulling jobs done faster, safer, at lower cost. Write today for your copy of Bulletin 204-M. It's yours for the asking! **The Duff-Norton Manufacturing Co. P. O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.**

If you write maker identify as **IEN-10711**

Reducing Costs in Speed Reducers

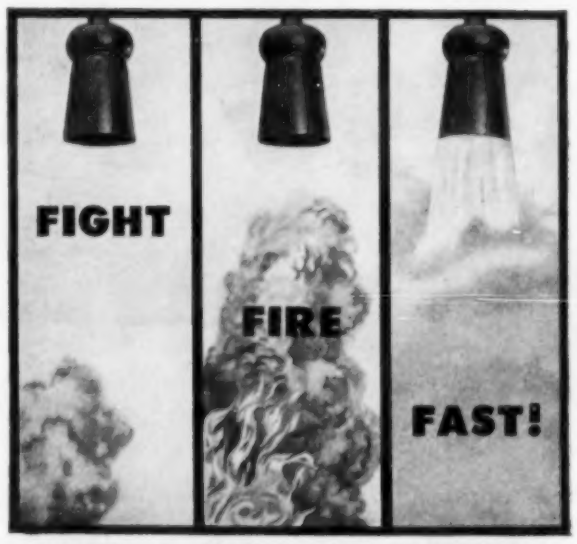
. . . with NEW DEPARTURES

Dodge Speed Reducers make good use of design advantages offered by New Departure snap-ring **ball** bearings. Snap rings locate the bearings in the case, eliminating need for adjustment. Doing away with threaded or shim-type devices permits straight-through boring of the housing. Thus split-case design is highly practical.

Learn what New Departure can do for your product. Talk with your New Departure engineer — *today!*

NEW DEPARTURE
BALL BEARINGS

If you write maker identify as **IEN-10712**



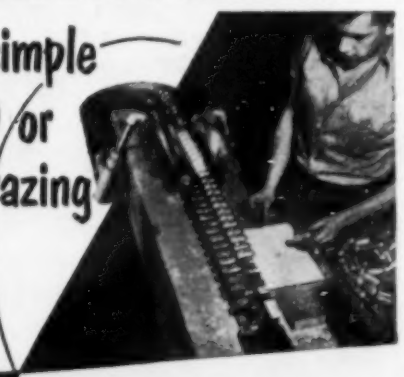
WITH A KIDDE CO_2 SYSTEM!

Let fire get a foothold, and a going concern is *gone*. Don't risk it. Install a Kidde Automatic CO_2 Fire Extinguishing System, and fire won't stand a chance.
A Kidde System goes into action immediately – releases clouds of CO_2 over the blaze, smothers fire almost as soon as it starts. And CO_2 leaves no mess. It puts out fire, then vanishes.
Protect flammable liquids, dip tanks, spray booths with a Kidde System. Let Kidde guard record vaults, machinery and electrical equipment.
And for on-the-spot protection, get Kidde portables. You just aim the horn, pull the trigger, and *swoosh!* No more fire.
Don't wait 'til it's too late – Contact Kidde today.

Kidde Walter Kidde & Company, Inc.
1036 Main Street
Belleville 9, New Jersey

If you write maker identify as **IEN-10713**

Amazingly simple EASY-FLO or SIL-FOS brazing pays big dividends



★ You can get **better** metal parts at **lower** cost—by designing them for EASY-FLO or SIL-FOS brazed construction—and using a production set-up that makes the brazing so easy — **anybody can do it!**

FOR EXAMPLE — A radiator valve made of a simple drawn body and a screw machine part, brazed with EASY-FLO. Operator merely places bodies in angle iron carriers on endless chain, dips spuds with preplaced EASY-FLO rings in Handy Flux and sets them in bodies. They're automatically brazed as they pass between city gas-air burners. Using only one row of carriers, output is 18 a minute. For full EASY-FLO and SIL-FOS low-temperature silver brazing details write for BULLETIN 20.

AT THE METAL SHOW Chicago-Nov. 1-5

SEE the exhibit of EASY-FLO and SIL-FOS brazed jobs from many industries. TALK with our brazing experts about your metal joining. BOOTH 342.

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
Distributors in Principal Cities. In Canada: Handy & Harman of Canada Ltd., Toronto

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The Adams Aftercooler and Cyclone Separator are a perfect team. The highly efficient aftercooler condenses more moisture . . . the separator's unique design creates a cyclone to remove more of the condensation.

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- no pulling compound's necessary
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Equal power with fewer belts . . .

NEW BROWNING SUPER GRIPBELTS

Oil proof . . . non-spark . . . heat-resistant

Illustration shows how 20 Browning Super Gripbelts can deliver same power as 30 standard belts, saving space and reducing sheave cost. Improved synthetic cord construction provides far greater strength and safety margin, better grip, less slip. Minimum stretch, maximum flexibility, simplified matching.

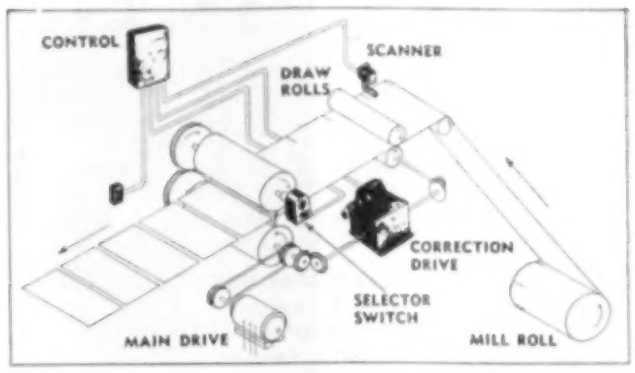
Ask your Browning distributor or write us for Bulletin 2019.

Browning MANUFACTURING COMPANY MAYSVILLE, KENTUCKY

If you write maker identify as IEN - 10717

Control - Electronic equipment and transmission to hold registration

Source: MACHINE O'MATIC INC.
2045 N. Hoyne Ave., Dept. IEN, Chicago 47, Ill.



Typical application

The company announces general availability of equipment it has previously developed and applied, primarily in the transparent bag industry, to hold registration of markings in a moving sheet so succeeding operations will keep in step with a predetermined layout. The illustration is a diagramatic example of the control for a rotary cut-off knife operating on a pre-printed mill roll.

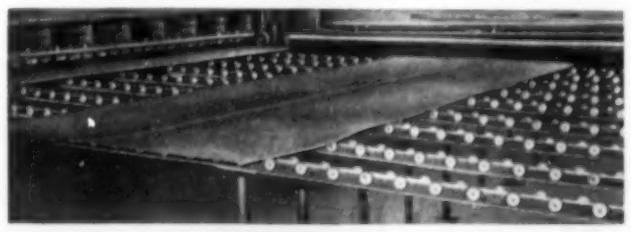
A photoelectric scanner, operating on either transmitted or reflected light, watches the print marks on the sheet in connection with a selector switch and control housing to operate a motor driven correction transmission in the event that the print mark is ahead or behind the location it should occupy at a given instant.

The equipment is suited for use on imprinting machines, die cutting machines, label punching equipment, punch presses, folders, sheet cutters, embossing machines, collating machines, wrapping equipment, as typical examples. The company is prepared to engineer the equipment into an application and is particularly well situated in this respect because it makes both the electronic and the mechanical equipment required for a complete installation.

If you write maker identify as IEN - 10718

Conveying - Angle mounted wheels assembled to make sheet handling table

Source: ALVEY-FERGUSON COMPANY
23 Disney St., Dept. IEN, Cincinnati 9, Ohio



User provides pipe supports

New application, in multiple on a slight incline, of the company's angle-mounted wheel equipped sections, forms a gravity conveyor table to handle sheet metal between two operations. Individual sections are available in 5 and 10-ft. lengths, straight or curved. They can be specified in complete assemblies for a given use.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10719

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Built for SERVICE in Industry

TIME SAVING

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EXTRA STURDY

IPCO EXTENSION CORD REEL

Keeps Cord off floor . . . Will not kink or fray . . . No shorts or shocks. Universal bracket for mounting on ceiling or wall, available with various types of fittings at cord end.

Approved By Underwriters Laboratories

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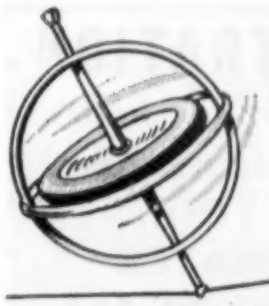
CASTELL push button LOCKTITE lead holder has PERFECT BALANCE



Perfect balance makes Push Button CASTELL LOCKTITE Holder the king of its class.

Exclusive collet holds lead in **bull dog grip,** preventing slipping or turning.

No graphite dust stains your fingers —because with one-hand push-button action you extend and retract the lead. *No need to touch graphite.* Comfortable "wood-pencil" feel—not metallic.

Equipped with easily-replaced clutch, giving your LOCKTITE indefinite life.

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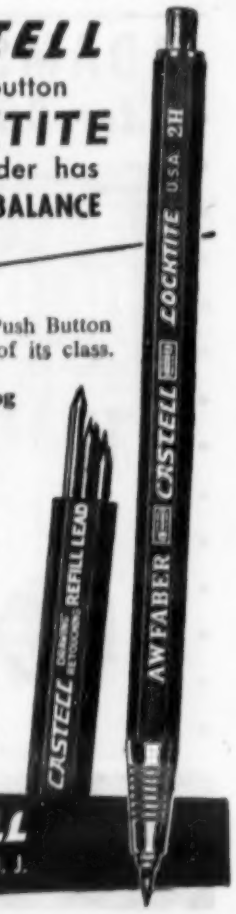

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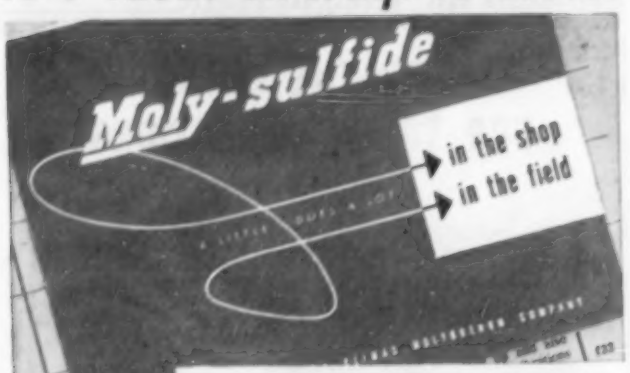

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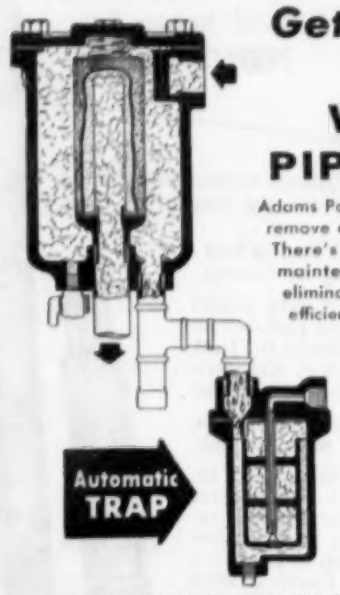

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ADAMS *Poro-Stone* AIR FILTER

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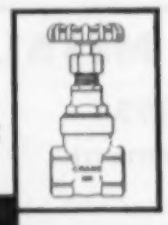

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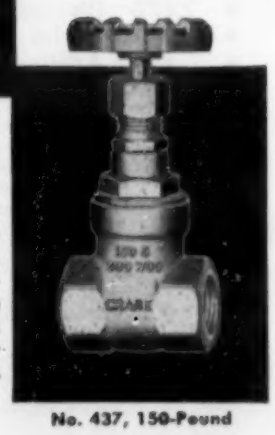
Complete facts, including sizes, prices and dimensions in new four-page Folder AD1944 just off the press. Send for yours today, or ask your Crane Representative.



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Industrial Equipment News IEN

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BPA SBME NBP

VOL. 22 OCTOBER, 1954 No. 10

Signaling and Control

We talked about automation in this space last month. We defined it as a continuing effort to eliminate operation road blocks by applying available facilities. Let's take it along another little step beyond our suggestion that you start simply. That suggestion still holds.

Automation progresses successfully only when it starts in a clean plant. It calls for washed windows, dust free lighting fixtures, clear aisles. It requires removal of obsolete equipment, worn out handling and storage facilities. It tolerates no dark cluttered corners or damaged floors or bad air conditions or back tracking in the production lines. As a matter of fact, a good many plants need go no further than just this starting cleanup to reap a very large part of the return that can be expected from complete automation.

Granting that a plant is ready for the next step, either of two plans of procedure can be followed. One is to apply automation engineering to a product and carry it through all of the steps to completion. The other is to work functionally and mechanize those operations that offer the best opportunity for return on the investment. The first course applies best to products that do not change in any respect over periods of time. The second is best where the product does vary. Let's look at it.

Two general functions can be counted as the starting points for mechanization. They are signaling and control. Signaling can be applied wherever there is a variable in the form of an undesired departure from a required course or, on the other hand, a required change to produce a desired result. Control is actuated by the signal to govern equipment or a mechanism that will return the variable to normal or make the called for change. The variable can be pressure, temperature, dimension, speed, viscosity, color, radiation, texture, hardness, flexibility, strength, level, wetness, volatility, to name just a few.

Four characteristics make practical the mechanization facilities now available. These are ability to detect variations previously imperceptible, to transmit, amplify and act instantaneously, to function without error, short of mechanical failure and to cost only the price for purchase, installation and maintenance.

We believe it will be worth all the time you can give it to become acquainted with these new things so you can match their abilities with your own manufacturing problems, if you are not already doing just that.

It might be a good idea to list the process variables that are most important or that constitute the principal sources for trouble in your plant and then make a study of the facilities available to mechanize them. IEN is ready to help by naming facilities, in addition to those currently reported, against any variables you specify.

Keep an eye particularly on controls, gages, signaling, testing, transducers. They are first-class starting points. Bear in mind, as you watch these things, that you will be avoiding a beautiful traffic jam if you make certain you also add adequate facilities to bring your product in and to take it away from any spot you do automate.

W. E. Irish

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the scene: HENDRICKSON MOTOR TRUCK CO., Lyons, Ill.

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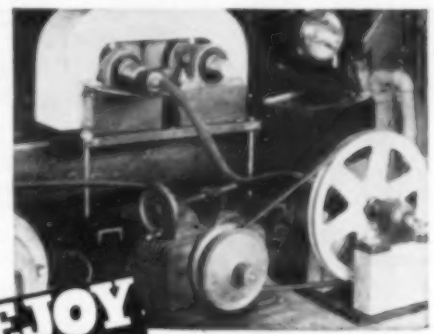

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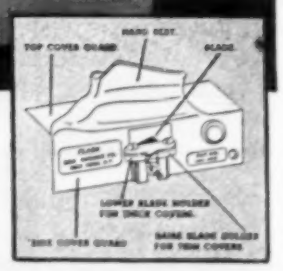
FLASH BOX OPENER

Opens Any Carton Quicker . . . Cleaner



Exclusive patented blade holder adjustable to varying thicknesses of carton covers.

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Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. *Already accepted by leading industries.*

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52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN-10732

Testing - Rockwell machine checks and sorts work by hardness

Source: AMERICAN CHAIN & CABLE CO.
929 Connecticut Ave., Dept. IEN, Bridgeport 2, Conn.

Automated

Work pieces are fed by power into this new automatic machine where they are automatically placed in position beneath a diamond penetrator. Test loads force the diamond into the work to determine its hardness. The reading shows on a dial. Then the machine retracts and a new work piece comes into position beneath the penetrator.

The hardness indication is picked up by photoelectric units mounted on the bezel ring of the dial gage to actuate transistors that transfer the readings to electric impulses. These impulses actuate relays that sort the work pieces, according to their hardness readings, into separate receivers. The machine will make as many as 1,200 tests per hour. The photoelectric detectors on the dial gage can be mounted to hold hardness limits as close as 2 points.

If you write maker identify as IEN-10733

Steel - Stainless steel wire for springs that must resist corrosion

Source: NATIONAL-STANDARD COMPANY
Dept. IEN, Niles, Mich.

Size range to ⅛ inch

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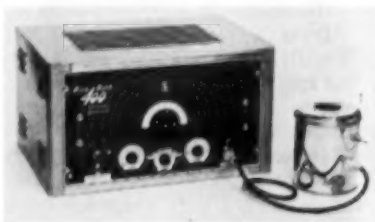
If you write maker identify as IEN-10734

Testing - Ultrasonic equipment for pilot processing and laboratory

Source: RICH-ROTH LABORATORIES
1240 Main St., Dept. IEN, Hartford 3, Conn.



Details upon request

Rich-Roth "400" designates a new 400-watt ultrasonic generator and transducer equipment for limited process operations such as degreasing, emulsifying, degasing, dispersing, extracting, fragmenting. The generator is tunable continuously over a frequency range from 10 to 1,200 kilocycles. Output impedance can be selected to couple the generator to various types of piezo-electric and magnetostrictive transducers.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-10735

TROMBETTA SOLENOID CO.

331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.

SB-373 SHOE BRAKE
10" WHEEL, 5" FACE, 450 FT.-LBS.

SB-300 LINE OF BRAKES
TORQUE 3 TO 16500 FT.-LBS.

B-100 LINE OF DISK BRAKES
TORQUE 10 TO 25000 FT.-LBS.

EIGHT LINES OF SOLENOIDS
RECIPROMOTORS AND SEMOTORS

If you write maker identify as IEN-10736

Industry's Most Versatile Heat Source

CHROMALOX *Electric* Strip Heaters

EASY TO INSTALL Chromalox Strip Heaters give dependable, accurately controlled heat where and when heat is needed. They produce uniform and exact temperatures by automatic or manual controls. Low initial installation and operating costs are among their many advantages. Get details now about Chromalox Heaters for heating liquids, gases, platens, molds, moving parts, etc.

Write for Catalog 50

It describes many Chromalox Electric Heaters and tells how to apply them.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Heating Units Advertisement, Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN-10737

For PRESS STAMPING PRODUCTS WITH CURVED OR STRAIGHT LINE MARKING

PRESS STYLE **STEEL TYPE HOLDER**

MODEL PH-50

Body and press shank are one piece with flanges to hold type chase in position. Type chase with almost any size or number of characters can be removed and inserted without operator placing hands in press.

Write for Catalog 100

Mecco **SAFETY** MARKING TOOLS — **M.E.CUNNINGHAM CO.**

1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN-10738

Stop stray metal

—before it reaches your customers

FOOD PACKAGES ready for shipment . . . but do they contain stray metal? Whether this metal is magnetic or nonmagnetic, sitting on top or buried deep, Allis-Chalmers Electronic Metal Detector finds it — keeps it from causing damage. Here are features of this device:

Economical — Uses 110 volts . . . draws only 140 watts . . . costs but a few pennies per day.

Fast Acting — Material may be conveyed through aperture of detector at speeds from 15 to 600 fpm.

Easy to Operate — An A-C serviceman will assist in making installation and instructing operator how to adjust and maintain unit. No other training needed.

A-4374

Call your nearby A-C office for complete details. Or write Allis-Chalmers, Milwaukee 1, Wis.

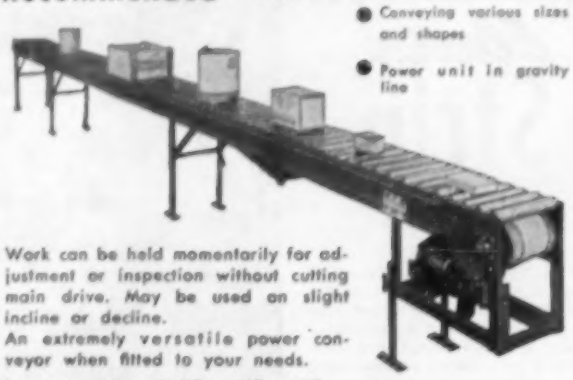
ALLIS-CHALMERS

If you write maker identify as IEN-10739

METZGAR LIVE-ROLLER CONVEYOR

Specifically Recommended for

- Moving sharp-cornered and rough-edged items
- Conveying various sizes and shapes
- Power unit in gravity line



Work can be held momentarily for adjustment or inspection without cutting main drive. May be used on slight incline or decline.

An extremely versatile power conveyor when fitted to your needs.

Standard widths: 11½" — 15" — 18" — 24". Length to suit. Conveyors up to 30' are powered by a 110 V. single phase gearhead A.C. or D.C. motor; longer units, 220/440 three phase A.C. or D.C. Roller spacing as required. Factory lubricated for life.

- Production-line work movement
- Handling heated and heat-treated items

Our engineers can help you most when you explain your requirements fully. Ask for Bulletin J-1.

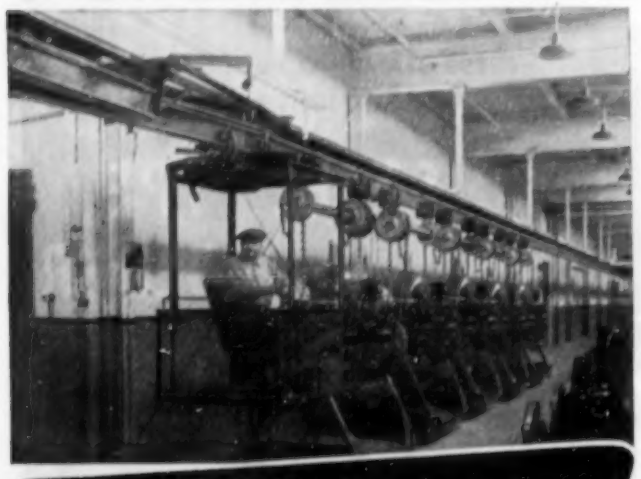
METZGAR CONVEYOR CO.

417 Douglas N. W.

MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

GRAND RAPIDS 4, MICH.

If you write maker identify as IEN-10740



what MONORAIL can do . . .

FOR LOW MAINTENANCE COSTS

American MonoRail equipment is specially engineered and carefully built for long-life, rugged service. Manual or automatic operation continues with little or no downtime for maintenance or repair.

Send for Bulletin C-1.

AMERICAN MONORAIL COMPANY

OVERHEAD HANDLING EQUIPMENT

13111 ATHENS AVENUE • CLEVELAND 7, OHIO

If you write maker identify as IEN-10741

JUST PRINTED!

NEW SLIDE CHART MAKES HEAT TREATING EASIER

Enables you to find at a glance this heat treating information on Carpenter Matched Tool and Die Steels:

- Forging heat
- Normalizing heat
- Annealing treatment
- Hardening treatment
- Drawing ranges
- Effect of drawing temperature on hardness

Gives new, valuable data on speed of heating with 2 vital rules for better results, tips on quenching in water, brine, oil and air, estimating oxidizing atmospheres, heating time, etc. A "must" to help every toolmaker and heat treater get better results, today. Return coupon now for free, easy-to-use slide chart.

THE CARPENTER STEEL COMPANY
151 W. Bern Street • Reading, Pa.

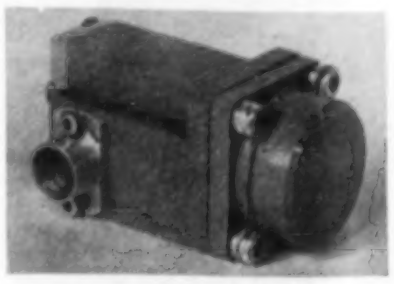
Please rush to me at no obligation, new Carpenter Guide to *Simplified* Tool Steel Heat Treating.

NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
(PLEASE PRINT)

If you write maker identify as IEN-10742

Valve - Four way hydraulic actuated by opposed electric coils

Source: CADILLAC GAGE CO.
Box 3806, Dept. IEN, Detroit 5, Mich.



Bulletin, "FC2 Servo Valve"

Type FC2 is a new four-way control valve to regulate the flow of hydraulic fluid to one side or the other of a hydraulic piston in proportion to an electrical input signal. Actuation is by two coils normally connected in opposition. Each coil has a resistance of 2,400 ohms. Maximum differential current for maximum hydraulic flow is 10 ma.

The valve connects into a hydraulic supply line carrying pressure at 500 to 3,000 pounds. It employs this pressure, in connection with the actuating coils, to move the valve piston for pressure and exhaust as desired. A shift in zero flow point, for supply pressure change from 3,000 to 1,500 lb., is equivalent to 0.5 ma.

Principal application is in servo mechanisms where high dynamic performance is required at high power level. Overall dimensions are about 3¾ by 2 by 2 inches. Hydraulic connections are threaded for ¼-in. pipe. Electrical connections are made at a Cannon connector on the housing side opposite to the hydraulic inlets and outlets.

If you write maker identify as IEN-10743

Ventilating - Exhaust unit discharges bad air, fumes through roof

Source: HARVEY P. BERTRAM CO.
1007 W. 9th St., Dept. IEN, Cincinnati 3, Ohio

Fail safe design

Opening action, to permit escape of fumes, smoke, heat in the event of fire and power failure, is assured by this new Pyrovent roof ventilator. The assembly includes an exhaust stack with damper flaps driven by a motor, a motor-driven exhaust fan and an electric thermostat. Sizes are 24 to 72 in. in fan diameter in direct and belt-driven fan designs. The thermostat is installed remote from the ventilator.

The damper motor operates with an integral coil spring to close the flaps by winding the spring when a pushbutton is operated that opens the circuit to the fan motor and closes the circuit to the damper motor. However, if the current should fail and thus open the damper motor circuit while it is holding the damper closed, the wound spring will run the motor in reverse and open the damper. Under normal conditions, pressing a second pushbutton closes the fan motor circuit and simultaneously opens the damper motor circuit so the damper will open and vent the fan driven air. The thermostat is connected into the fan motor circuit to close it independent of the pushbutton station in the event of a serious rate of temperature rise above the set limit.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-10744

Need a building? Or a series of them? Quickly, and at low cost?

Truscon SPEED-ERECT Steel Buildings can be arranged to fit exactly your requirements of design and budget. Truscon Steel Buildings are available in a wide range of standard designs. They are used for all kinds of industrial and commercial buildings because they offer fire protection, permanence, ease and speed of erection, low upkeep, low cost, high investment value. Truscon Steel Buildings have a high salvage value which permits them to be dismantled and re-erected in an entirely new location at modest expense.

Write and tell us your building requirements.

FREE BOOK—Plan your building needs with the aid of the fully illustrated, 24 page catalog giving full details on these Truscon Ready-Made Steel Buildings. Write for your free copy today.

TRUSCON STEEL DIVISION • REPUBLIC STEEL
1094 Albert Street • Youngstown 1, Ohio

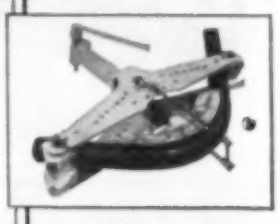
If you write maker identify as IEN-10745

- 690¾ hours in time
- $317.83 in materials

SAVED ON ONE JOB WITH A TAL PORTABLE BENDER

by L. R. Schmaus Co. Milwaukee

Savings on the first 100 bends repaid the *entire* cost of this Tal ONE-SHOT Bender — used in the heating installation for the S. Clement Ave. School in Milwaukee. 583 90° bends were made in 1" to 3" steel pipe, and 450 90° bends in ⅜" to ¾" hard copper tubing. This saved 2066 welds or threads, plus 1033 cuts and the cost of fittings and scrap pipe—BECAUSE a Tal ONE-SHOT completes bends in *one single operation.* It is not necessary to shift pipe.



COMPLETE LINE OF BENDERS

- For pipe up to 8"
- For copper and thin-wall tubing.
- For radiant heat in any radius.

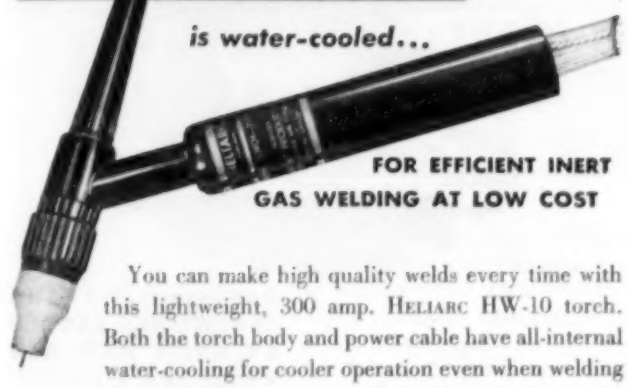
TAL BENDER, INC.

DEPT. 2 • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN-10746

Lightweight HELIARC TORCH

is water-cooled...



FOR EFFICIENT INERT GAS WELDING AT LOW COST

You can make high quality welds every time with this lightweight, 300 amp. HELIARC HW-10 torch. Both the torch body and power cable have all-internal water-cooling for cooler operation even when welding continuously at full capacity. Yet cleaning is easy for all water passages are straight. Electrode adjustment is quick and simple, too. No wrenches needed. And electrode stub loss is minimized by an improved water-cooling system. Call your nearest LINDE representative today for more details on the HELIARC HW-10 torch.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The terms "Heliarc" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

If you write maker identify as IEN-10747

"IN-STOCK" SERVICE ON FAMOUS SPHINX BRAND MICRO-DRILLS

High speed drills for small holes. Sizes from .08 mm (.003") to 1.0 mm (.040") carried in stock, in increments of .01 mm (.0004").

Sphinx brand micro-drills used throughout the world for many years for all fine watch and instrument work.

Send for Bulletin N listing sizes and prices of stock drill sizes and micro-drilling equipment.

These precision drills are available in two styles, flat pivot drills or spiral fluted drills. They are made with concentric oversize shanks. Because of their rigidity they are especially useful in all types of drilling equipment.

LEVIN ®
Louis Levin & Son, Inc.
3610 South Broadway • Los Angeles 7, California

If you write maker identify as IEN - 10748

• it takes *imagination* to put into your product all the benefits your customers want . . . and that's just what Rigid-tex Metals can give you to increase the eye-appeal and the value of your ideas. if you're interested in design-strengthened patterns that have unusual decorative appeal, resist and conceal damage, reduce weight yet increase strength and have been used in nearly every product under the sun:

Send for 16-page complete catalog . . . on company letterheads please, or see Sweets Catalog 1a/Ri.

See us at the
NATIONAL METAL EXPOSITION
in Chicago, November 1-5, 1954
Booth No. 1425

RIGID-tex METALS

RIGIDIZED METALS CORPORATION
66410 OHIO STREET BUFFALO 3, N. Y.

50 Warehouses and Sales Representatives in All Principal Cities Throughout the U. S. and Canada

U. S. & Foreign Patents

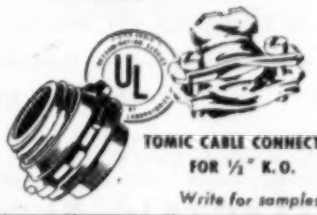
If you write maker identify as IEN - 10749

STOP vital news for ALL PRODUCTION ENGINEERS!

• If you use Cord Connectors or Thinwall Connectors in your electrical assembly

INVESTIGATE TOMIC TODAY!

- EASIER TO INSTALL
- SLIPS IN FROM OUTSIDE
- SAVES VALUABLE TIME
- WILL NEVER SHAKE LOOSE



TOMIC THINWALL CONNECTORS AND COUPLINGS ½", ¾", 1"

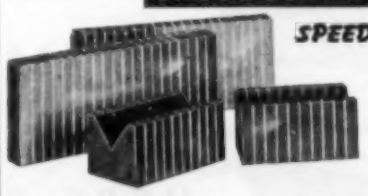
TOMIC CABLE CONNECTOR FOR ½" K.O.

Write for samples

TOMIC Sales & Engineering Co.
20000 SHERWOOD AVE. • DETROIT 34, MICH.

If you write maker identify as IEN - 10750

MAGNE-BLOX



SPEED SURFACE GRINDING SET-UPS WITH
MAGNE-BLOX
Laminated Parallels
V-Blocks & Angle Irons

- Grind Work Square
- Grind Work Parallel
- Hold Round Pieces
- Save your Magnetic Chucks
- Eliminate Clamps
- Eliminate Holding Devices

UNIVERSAL SET In Case $22.25
Code GANBO

Write for Folder—Code GINXA

RADIUS DRESSER

SPEED UP PRODUCTION with the "Little Wonder" RADIUS DRESSER

Dressing and Shaping Grinding Wheels up to 1" Convex or Concave Without Diamond - Code GAHLE $39.50

Natural Pointed 1/3 K. Diamond $6.50

Better Support by using Swinging Arm pivoted on Lapped Centers, eliminating Vibration and giving Better Finish.

Write for Illustrated Folder—Code GINYY

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN - 10751

Honing - Variable speed machine, work range from 0.185 to 2.500 inches

Source: SUPERIOR HONE CORP.
1611 Elreno St., Dept. IEN, Elkhart, Ind.

400 to 1,000 rpm.

Mandrels fit on the spindle of this new machine with a bayonet lock so no adapters are required. Mandrels and stones can be changed without need for tools. The stones are ground to size. The machine can be employed to hone over keyways, splines, most broken surfaces while coolant is directed over the work by built-in circulating equipment. A counterbalanced foot pedal applies required honing pressure.

The machine is known as Model JCP. It stands about 60 in. in height by 33 in. in width. It is 31 in. in depth with its coolant pan pushed back toward the column, and 41 in. when the pan is drawn out for long work.

If you write maker identify as IEN - 10752

Painting - Spray booth coating accumulates overspray, strips clean

Source: DU BOIS COMPANY
1120 W. Front St., Dept. IEN, Cincinnati 3, Ohio

Smooth film reflects light

Peel Filmite is a new liquid plastic material for spray application on the walls of a paint booth. The liquid dries to a smooth white opaque coating to accumulate overspray. Then it and the accumulated paint can be stripped off clean.

The liquid dries in a few minutes to a film that will not support combustion and is not subject to attack by alcohol, gasoline, oils, fats, grease, acids, alkalis.

If you write maker identify as IEN - 10753

Drive - Variable pitch sheave for motors rating to ⅓ horsepower

Source: GERBING MFG. CORP.
11800 Milwaukee Ave., Dept. IEN, Northbrook, Ill.

Single unit $5.40

Maximum pitch diameter is 3 in. and minimum is 1½ in. for this new Var 'A' Cone spring backed variable pitch sheave. Construction of the new Model 30 is in cast iron with oil impregnated bearings so no service lubrication is required. The sheave takes a standard "A" section V-belt, provides maximum speed variation of 2 to 1 in a motor movement on its base of 1⅜ inches. Application is on a motor to ⅓ hp. for operation at speeds to 1,750 rpm. Maximum bore is ¾ inch. Length is about 2⅞ inches. Diameter is 3⅜ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10754

Logan Ball Transfer units consist of a large steel ball which rotates on a bed of small balls contained in a hardened steel cup.

BALL TRANSFERS

Logan Ball Transfers are handling equipment, designed primarily for use in transferring at right angles or where it is desired to rotate packages without lifting. Can be adapted to other applications. You can buy separate ball assemblies from stock or complete tables made-to-order.

Logan offers Ball Transfer units in several different sizes.

Further information on request.

Ball Pedestal units also available for handling sheets and plates.

Logan Conveyors
LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN - 10755

for clear, accurate NAME PLATE MARKING

WAGNER DISTRIBUTION TRANSFORMER

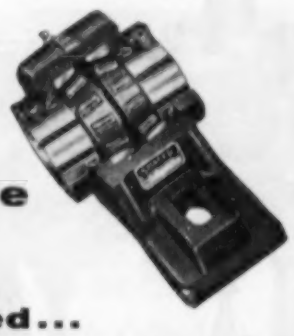
"Its accuracy and the uniform clearness of the marking are the features that make it superior to the method previously used," say officials of Wagner Electric Corporation, St. Louis, about the Automark.

This unique detail marking machine employs a standard typewriter keyboard. Light touch on key produces mark by instantaneous electrical response. Production speeded, operator fatigue lessened. Heavy-duty table. Wide range of plate size and thickness. Type sizes from 1/16" to ¼".

For complete details on the Automark metal marking electric typewriter, WRITE TODAY for Bulletin 8-16.

DEFIANCE MACHINE & TOOL COMPANY
1926 South Vandeventer Ave. • St. Louis 10, Mo.

If you write maker identify as IEN - 10756



To cut Maintenance Cost You Need...

Self-Aligning advantages of Shafer Roller Bearings that instantly compensate for shaft deflections. In ordinary bearings this misalignment causes binding, skewing... power loss.

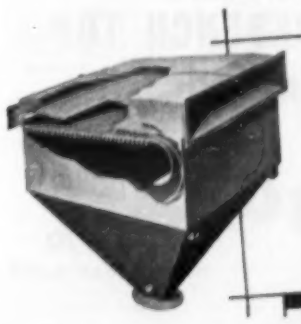
High Capacity...of Shafer ConCaVex, the original low friction, high capacity bearing. This design carries radial, thrust and shock loads in the same high-capacity area in the center of the roller.

Easy Adjustment...to compensate for wear as provided by the Shafer exclusive Micro-Lock. With nothing more than a screw driver, you can make adjustment in increments of .007".

Send for Catalog 51. Shafer Bearing Division, 801 Burlington Ave., Downers Grove, Illinois.

SHAFER BEARING DIVISION
CHAIN BELT COMPANY

If you write maker identify as IEN - 10757



Solves Big Problem for Small Boiler Operators!

Buell 'LR' Collector gets 99% of all 100-mesh and larger cinder discharge. Top efficiency for boilers from 100 to 2000 BHP.

Draft loss so low you can use 'LR' on the smallest natural draft boilers.

Get all the facts—write for 'LR' Bulletin. Buell Engineering Company, Dept. J-22, 70 Pine Street New York 5, New York.

buell
Engineered Efficiency in
DUST COLLECTION

If you write maker identify as IEN-10758

TO ADD BEAUTY, COLOR AND SALES APPEAL
FOR CUSHIONING
FOR SILENCING

FOR A DURABLE PROTECTIVE COATING

INVESTIGATE *Cellusuede* FLOCK

THE PRODUCT FINISH *with* A THOUSAND USES

Every day product designers, industrial finish and material engineers are finding new, profitable uses for Cellusuede Flock—industry's most versatile product coating. With these cotton, rayon or hair fibers, you can add new beauty, color, and sales appeal to your product, provide a durable protective finish, silence noises, or dampen vibration. Best of all, the soft velvet-like Cellusuede finish is easy to apply to wood, metal, plastic, fabrics, leather, cardboard, or paper surfaces, either on a modified or production line basis. It's inexpensive, more durable than fabric, and readily available in a wide range of textures and beautiful colors. Investigate today the profit possibility of using Cellusuede for your product.

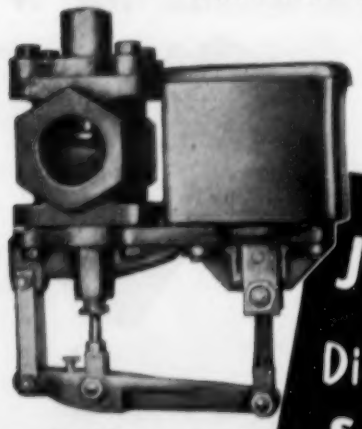
FREE BULLETIN—SAMPLES, TECHNICAL SERVICE

Write for 12-page bulletin illustrating profitable uses and applications. For help with a specific job, Cellusuede's technical service and unexcelled facilities are available for producing samples to meet your needs.

CELLUSUEDE PRODUCTS, INC.
Producers of Natural and Synthetic Flock
520 N. MADISON STREET • ROCKFORD, ILL.

If you write maker identify as IEN-10759

OUTSTANDING FOR STEAM SERVICE



JOHNSON
Direct Operated
SOLENOID VALVES

Stainless steel valve and seat. Sizes: ½" to 3". Write for facts.

Job after job, these Johnson Direct Acting Solenoid Valves are proving an ideal answer for service on steam lines. Their design removes the solenoid proper from the heat of the line, permits a leverage system with ample power to open against differential pressures up to 150 lbs. There are no pilot valves or auxiliary pistons, and construction is really heavy duty throughout. You will find their inherent simplicity and instant response will solve a lot of operating problems like no other valve can.

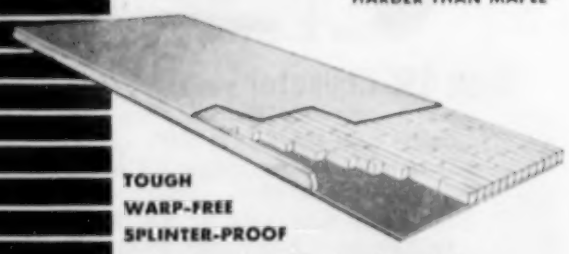
THE JOHNSON CORPORATION
846 Wood St., Three Rivers, Mich.

If you write maker identify as IEN-10760

NEW

WORKBENCH TOP ... Resinwood

ShopTop 30%
"HARDER THAN MAPLE"



TOUGH
WARP-FREE
SPLINTER-PROOF

For All Industries

ShopTop quality is superior to maple — with up to 50% greater economy. Select kiln-dried cores, bonded under pressure and heat, provide a built-in impact cushion to give longer life. Smooth Resinwood facings resist acid, alkali, oil, and grease. For new or replacement work benches.

Made in any size to meet your requirements.

Available through selected industrial distributors in principal cities or write direct for sample and price list.

RIMCO — QUALITY — 1868 — MILLWORK

ROCK ISLAND MILLWORK COMPANY
RESINWOOD DIVISION
Established 1868 Rock Island 3, Illinois

If you write maker identify as IEN-10761

Wood Working - Radial arm machine drives 10 or 12 in. circular saw blade

Source: DE WALT INCORPORATED
63 Fountain Ave., Dept. IEN, Lancaster, Pa.

List price is $395

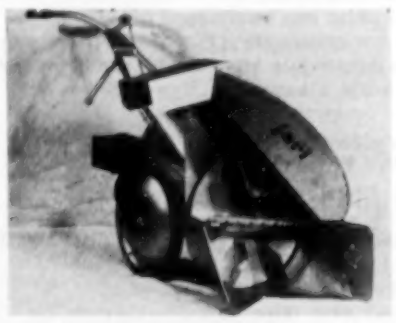
Cut-off capacity is 16 in. in 1-in. material for this new Model GWI radial arm multipurpose sawing machine. A 52-in. panel can be ripped through its center. Maximum depth of cut, with the standard 10 in. blade, is 3 inches. This can be increased to 4 in. with a 12-in. blade that can be specified. The motor rates 1½ hp. and is equipped with a voltage change switch so the machine can be operated on either 110 or 220-volt single-phase ac.

Red plastic control handles are part of the standard assembly. A safety switch can be locked so the machine cannot be used by unauthorized personnel. The table is equipped with carrying handles. A dust collector guard covers the upper portion of the blade.

If you write maker identify as IEN-10762

Snow Plow - Engine driven, gathers and throws snow to one side

Source: JARI PRODUCTS INC.
2938 Pillsbury Ave., Dept. IEN, Minneapolis 8, Minn.



Cuts 20 inch path

Reinforced steering handle and heavier construction feature new construction of the 2½-hp. Champion snow plow, previously described IEN-12990-53. The machine will clear a path 20 in. in width and will operate in drifts to 36 in. in depth. Its casting chute is adjustable. **The gasoline engine** supplies power to drive the rotating cutter and throwing blade with its breakup rake and also to advance the machine so the operator needs only to steer and follow. Various attachments convert the power unit to other seasonal uses.

If you write maker identify as IEN-10763

Explosion proof and dust tight stations have been added to its line of communicating equipment by Executone Incorporated, 415 Lexington Ave., Dept. IEN, New York 17, N. Y. The company can supply the equipment to operate in connection with its regular electronic communicating installations. A hazardous department can be connected into a plant circuit for safe operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER ... Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-10764

AIR POWER

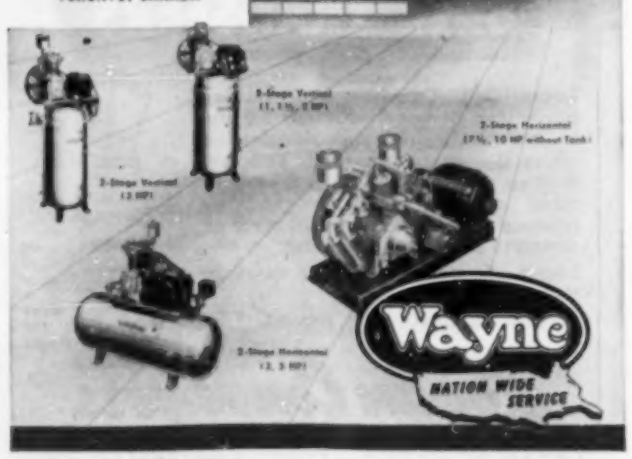
BUILT FOR YOUR NEEDS

WAYNE *Job-Engineered* COMPRESSORS

NAME YOUR air requirements—we'll apply the Wayne Air Compressor to the job. Your air capacity, air pressure, horsepower and other requirements are related to one of the Wayne complete line of single- and two-stage compressors, high- and low-pressure types, horizontal and vertical models, sizes from fractional to 10 hp.

Wayne gives you pre-tested, guaranteed, full-rated air power—not just a theoretical displacement rating—for each recommended compressor. All this, plus longer-service automotive-type pistons, the Wayne "wear-guard" constant-level lubrication, and extra cooling capacity. Write today for data on "How to Select an Air Compressor."

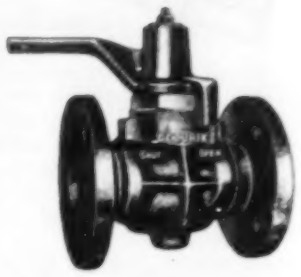
THE WAYNE PUMP COMPANY
SALISBURY, MARYLAND
TORONTO, CANADA



If you write maker identify as IEN-10765

DeZURIK VALVES TO HANDLE....

PLATING SOLUTIONS



In hundreds of industrial services, in plant after plant, DeZURIK VALVES are handling more lines—and handling them without leakage, without lubrication, without continual maintenance, WITHOUT TROUBLE!

In a recent installation DeZURIK VALVES with synthetic rubber plug facings were specified to handle the effluent from the treatment of cyanide bearing wastes with sodium hypochlorite and caustic.

Try DeZURIK VALVES — on air, liquid or semi-solid services. They are available in manual or automatic models, in sizes ½" thru 20", in a full range of metals. Write for more details on these versatile valves.

OTHER TYPICAL SERVICES
- Aircraft Fuels
- Quenching Oil
- Natural Gas
- Fatty Acids
- Naphtha
- and many more

DeZURIK SHOWER CO.
SARTELL, MINN.

If you write maker identify as IEN-10766

"MARVEL"

Ball Bearing Portable Electric Blower

Model 2
$60.00
⅓ H.P.

Order one on 10 DAYS' FREE TRIAL

2/5 H.P. Model No. 3 **$75.00**

1 H.P. Model No. 4 **$98.00**

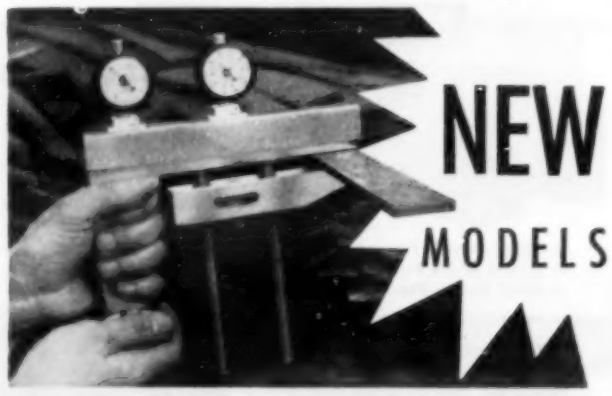
For blowing dust, dirt, chips out of motors, switchboards, or ANY industrial product. Every industrial plant is a prospect.

Write for Bulletin

Vacuum Cleaner Attachment for $18.00 additional for Models No. 2 and No. 3 only.
In daily use in more than 8,000 industrial plants.

ELECTRIC BLOWER COMPANY
352 Atlantic Ave., Boston 10, Mass., U.S.A.

If you write maker identify as IEN-10767



PORTABLE HARDNESS TESTERS

RIEHLE portables test *inside and outside* surfaces of parts inaccessible or difficult to test on bench machines. Riehle testers weigh but a few pounds and come in handy carrying cases. They save the expense and time of cutting samples from heavy parts. Testers simply clamp onto specimens.

Riehle Portable Hardness Testers eliminate "conversion" errors by using standard Rockwell indentor and loadings. Scales: A, B, C, D, F and G. Capacities: up to 12" diameter or thickness.

RIEHLE TESTING MACHINES
Division of American Machine and Metals, Inc.
East Moline, Illinois

FREE BULLETIN WRITE DEPT. IEN-1054

If you write maker identify as IEN - 10768

The simpler way to save on fastenings to metal, plastics, plywood

Hardened Self-tapping Screws

Industry's favorite for fastenings to light gage sheet metals, wood, asbestos, plywood and other hard compositions.

FASTER—eliminate tapping, soldering, riveting, or bolting.

STRONGER—Special heat treatment, originated by P-K, assures uniform hardness, to form clean threads, and toughness, to prevent breakage.

LOWER COST—saves time, simplifies assemblies, permits use of power drivers.

Type A Slotted or Phillips

IF IT'S P-K . . . IT'S O.K. For guaranteed quality, get the *Original*. Samples free. Ask your P-K Distributor or write to the: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

PARKER-KALON®

The Original **SELF-TAPPING SCREWS**

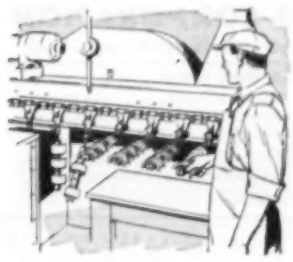
If you write maker identify as IEN - 10769

See how Carboloy magnets save time, money in the shop

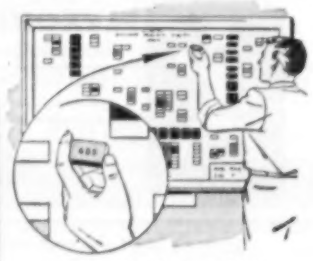
FREE PERMANENT MAGNET IDEA KIT

Send for free magnet kit containing suggestions that really pay off in the plant. See how Carboloy permanent magnets can eliminate costly clamps, jigs, vises . . . how they'll save you time and maintenance costs. Magnets need no electric power. Cost nothing to operate – last forever.

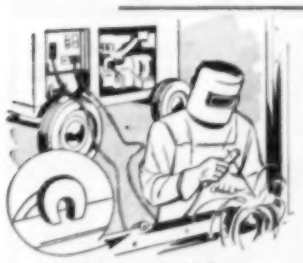
Shown below are a few of the ways magnets are used as mechanical holding devices – working better, cheaper, faster than devices previously used.



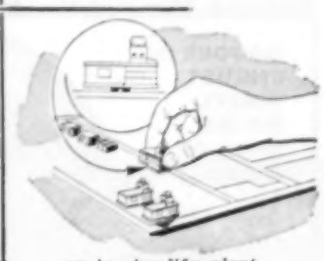
In plating-rack conveyors, for example . . .



to show traffic on vehicle dispatch board . . .



to attach ground from portable welders . . .



or to simplify plant layout planning.

Get a "You-Try-It" Magnet Assortment

Shop Package No. 1 – Contains 48 Carboloy Permanent magnets: 8 styles – 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00. Send coupon today.

Shop Package No. 2 – Contains 18 magnets: 4 styles – 2 pairs each; and 1 style – 1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00. Order today.

"Carboloy" is the trademark of the Carboloy Department of General Electric Company

MAIL THIS COUPON TODAY

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Avenue, Detroit 32, Michigan

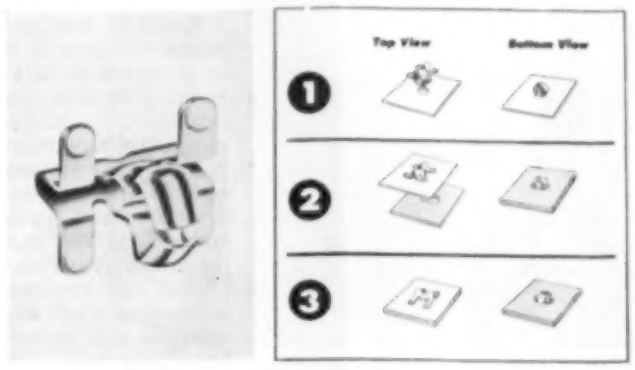
☐ Send me free Magnet Idea Kit
☐ Send me ____ Shop Package No. 1 at $10.00 each, postpaid.
☐ Send me ____ Shop Package No. 2 at $15.00 each, postpaid.
☐ Enclosed is check or money order for $ ____. ☐ Send C.O.D.

Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 10771

Fastening - Secures two sheets in removable assembly, turns to clamp

Source: SHAKEPROOF DIVISION
St. Charles Road, Dept. IEN, Elgin, Ill.



Samples and technical data on request

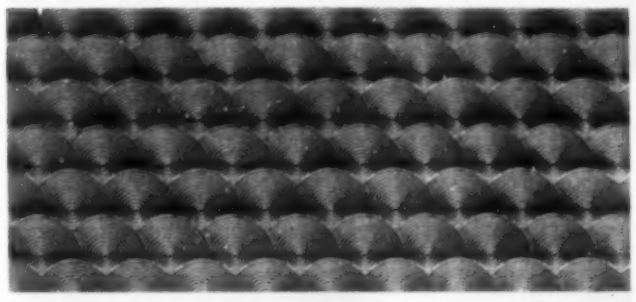
Sheet metal parts, such as pans, cover plates, access covers, are held in secure but quickly removable assembly with access to only one side by this new Type Q-4 quarter turn fastener. It is available in various sizes for specified metal thickness capacity. The material is spring steel.

Initial application is by snapping the two spring fingers into a circular hole in an outer panel as at 1 in the illustration. It is intended to remain in this hole in which it is free to turn. The panel is positioned on a backing sheet or plate in which elongated holes have been cut as shown at 2. It is turned 90 deg. to engage and clamp on the narrow hole sides as shown at 3. The clamping grip is released for free removal of the panel after turning another 90 degrees.

If you write maker identify as IEN - 10772

Metals - Design strengthened 1-ET pattern is resistant to marring

Source: RIGHIDIZED METALS CORP.
664 Ohio St., Dept. IEN, Buffalo 3, N. Y.



Sample card upon request

Diminishing circles in overlapping arrangement produce a decorative surface that conceals surface imperfections, hides scratches, minimizes glare and resists marring. The new pattern is available in aluminum, brass, copper, stainless and carbon steel. Width is to 7 in. in cut sheets, strip or coil, solid or perforated.

Suggested applications are for interior car trim, door panels, radio and television cabinet trim and speaker grilles, appliances, lighting fixtures, instrument cases. The metal fabricates with the usual procedures and equipment. Maximum pattern depth is 0.025 inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . See Page 50

If you write maker identify as IEN - 10773

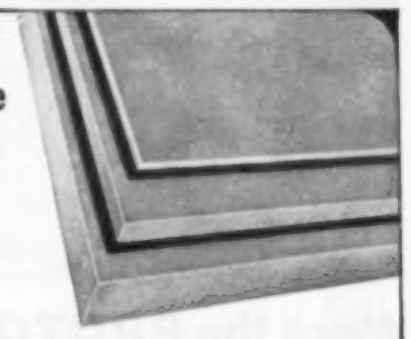
Group of RUEMELIN Fume Collectors Keeps Shop Clear of Welding Fumes

This well ventilated welding department is typical of hundreds of similar installations. Welding operators appreciate smoke and gas-free atmosphere. Thousands in service. Many repeat orders. Collecting fumes at the source with local exhaust hoods has proven most practical in operation. It is particularly helpful in winter months when doors and windows are closed. Write for Bulletin 37-D describing all types of Ruemelin Fume Collectors.

RUEMELIN MFG. CO.
3863 N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.
MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

If you write maker identify as IEN - 10774

Cut machine downtime due to abrasive wear



Make critical parts

from AMPCO* METAL GRADE 8 SHEET and PLATE

MORE manufacturers are discovering this every day. Your machinery has better stamina, longer life, and greater dependability when parts in severe service applications are made from Ampco Metal Grade 8 Sheet and Plate. It has exceptional resistance to all destructive forces that cut machine life — it resists abrasion, erosion, corrosion, impact, fatigue, etc. It's ideal for ways, slides, gibs, wear plates, wear strips, etc.

Ampco Metal Sheet and Plate is available in all standard sizes to 3" thick. Start specifying Ampco now for critical wear spots in all your machines.

*Reg. U. S. Pat. Off.

AMPCO® *Sole producer of genuine Ampco Metal*

Ampco Metal, Inc.
Dept. IE-10, Milwaukee 46, Wisconsin
West Coast Plant • Burbank, California
D-30

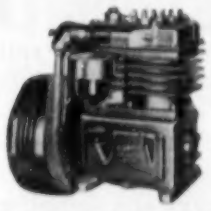
If you write maker identify as IEN - 10775

GET MORE PRODUCTION PER MAN HOUR

with the Help of Dependable Efficient

Curtis

Air Compressors



Available up to 320 cu. ft. Can be supplied base mounted up to 50 H.P. or tank mounted up to 15 H.P. Timken bearing equipped . . . precision built.

Air Cylinders and Hoists

To lift, lower, push, or pull

Pendant air hoist is ideal for lifting or lowering—Bracketed Air cylinder can be mounted in any position for lifting, lowering, pushing or pulling.

For more information write to:

CURTIS PNEUMATIC MACHINERY DIVISION of Curtis Mfg. Co.
1941 Kienlen Avenue • St. Louis 20, Missouri
764

100 Years of Successful Manufacturing Experience

If you write maker identify as IEN - 10776

Here's How to rate the EFFICIENCY of your COMPOUND MELTERS

The rate of efficiency which your plant reaches in the melting of compounds, pitches, tars, wax or soft metals, may never show up prominently on your cost records. But the costs are *there* and the efficiency of compound melting (or the lack of it) affects total manufacturing cost whether you notice it or not.

So, the next time you walk past your compound melting operation why not ask a few pointed questions?

For instance, ask . . .

Does the melter overheat and burn the contents, thus destroying the batch so it must be discarded?

Does the melter leave cold lumps of unmelted material in areas farthest from the heat?

Do valves or outlets freeze and clog?

Can the dispensing rate keep pace with production requirements?

50 gal. compound melter with power agitator.

Because of its basic good design, *every* Sta-Warm melter from 1 qt. to hundreds of gallons cap. satisfactorily controls the above points of irritation where production delays are caused and where costs soar.

For catalog sheets describing Sta-Warm high-efficiency compound melters, inquire today. Outline your general requirements.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN-10777

Meet the PROTO "Maintenance Master" – the Tool Set You Designed!

Extensive research among industrial maintenance men has resulted in the new PROTO "Maintenance Master," designed to their specifications. You will appreciate its great efficiency because each tool will perform on many jobs. You can be proud to own the 9901, with its *Professional Quality*. Each tool is forged and heat treated for safety and long life. Advanced designs are great time savers and their guarantee protects your investment. Compare the completeness of the 9901 with your present tools or buy one from your PROTO dealer. Send 10¢ for 68-page catalog to

No. 9901 "Maintenance Master"
Contents: 5 socket sets and attachments, wrenches, pliers, screwdrivers, torque wrench, gauge sets, snips, puller, hacksaws, soft hammer, bars, screw extractors, special tools. No. 9902 has chest; No. 9903 has a "Toolmobile" cabinet.

PLOMB TOOL COMPANY
2271Y Santa Fe Ave.,
Los Angeles 54, Calif.
5494

PROTO TOOLS
Eastern Factory—Jamestown, N.Y.
Canadian Factory—London, Ont.

If you write maker identify as IEN-10778

ROLL and WRAP FLEXIBLE MATERIALS *automatically*

You can save time and labor with a Dyken machine if you roll lengths of
SCREENING • LAMINATED PAPER • TEXTILES
ROOFING • CARPETING • WALLPAPER
RUGS • PLASTIC • RUBBER • LEATHER
OILCLOTH • LINOLEUM • CANVAS • CORK
PADDING • FELT • BURLAP • INSULATION
and other pliable materials!

ONLY A DYKEN Rolling Machine will roll (or roll and paper-wrap) lengths of flexible material . . . *without requiring center cores, starting bars or mandrels.* Automatic starting. Push-button control permits using unskilled operators. Compact rolls save storage and shipping space. Standard machine models available for all material widths and lengths. Fully patented.

WRITE TODAY FOR COMPLETE DETAILS—
Describe your problem fully for recommendations by our engineers. No obligation.

DYKEN MFG. CO., Inc.
734 Indiana Ave.
West Bend, Wis.

If you write maker identify as IEN-10779

WHY GAMBLE... that your motors won't burn out?

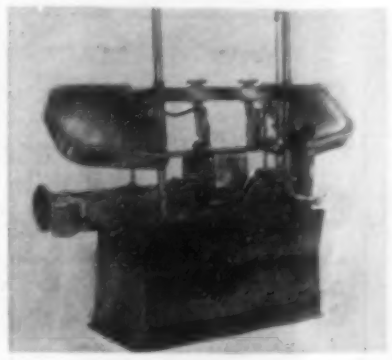
Do as scores of original equipment manufacturers do: insist on the magnet wire proved *most reliable* over many years . . . Anaconda's glass-insulated Vitrotex* Magnet Wire which gives hot spot protection as high as 130-135° C . . . or Anaconda's Class H Silotex* Magnet Wire which resists temperatures up to 180° C. See your Anaconda Salesman today. Anaconda's complete line of quality magnet wire, plus constant research into new materials and methods, make him a good man to know. Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y. *Reg. U. S. Pat. Off. 54021A

ANACONDA® MAGNET WIRE

If you write maker identify as IEN-10780

Sawing - Band saw machine, vertical feed and variable speed drive

Source: W. F. WELLS & SONS
N. on U. S. 31, Dept. IEN, Three Rivers, Mich.



Operates wet or dry

Model W with capacity for work to 9 by 18 in. and Model F rating 14 by 18 in. are new machines in the company's line. Both feature vertical feed and variable speed drive for band speed from 50 to 290 feet per minute. Both machines are operated hydraulically and are equipped with metering valves to permit choice of speed and feed pressure. The cutting head is a welded assembly designed for quick blade change. A coolant and chip tray is standard equipment. A power-operated bar feed can be specified.

If you write maker identify as IEN-10781

Floors - Magnesium dock board bridges between platform and truck

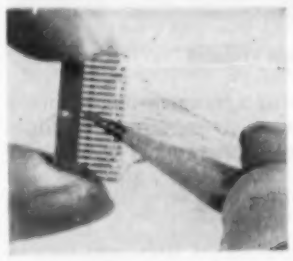
Source: MAGLINE INCORPORATED
1900 Mercer St., Dept. IEN, Pinconning, Mich.

Bulletin DB-204R

New safety curb features the design of this magnesium dock board. It is shaped to prevent trucks from running over the edge and, at the same time, to prevent contact with the wheel rims. As a result the curb is not scored to in turn, cut the truck tires. Curved curb ends are made of cast magnesium. The board is available to specification for loads to 10 ton. Patent has been applied for on the construction.

If you write maker identify as IEN-10782

Twenty little dot size bits of lead sulfide are coated on a piece of glass measuring ¾ in. in length to demonstrate the new light and heat sensitive cell known as the Ektron Detector. Extreme infrared sensitivity of each cell, coupled with its simplicity and adaptability to manufacture in any size and shape, opens new possibilities in detecting "warm" objects without physical contact and over long distances. The cell is available from from Eastman Kodak Co., 343 State St., Dept. IEN, Rochester 4, N. Y. List price is under $15, each in quantities minimum at eleven.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-10783

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

SAVE The WORKER and you SAVE PRODUCTION

Stonehouse Signs are made in accordance with "American Standards Ass'n Specifications for Accident Prevention Signs"...the only authentic standards.

Hundreds of different stock-worded signs for prompt shipment • Special worded Accident Prevention signs also produced to your specifications.

Our complete Catalog No. 9, 64 pages, full color, free on request.

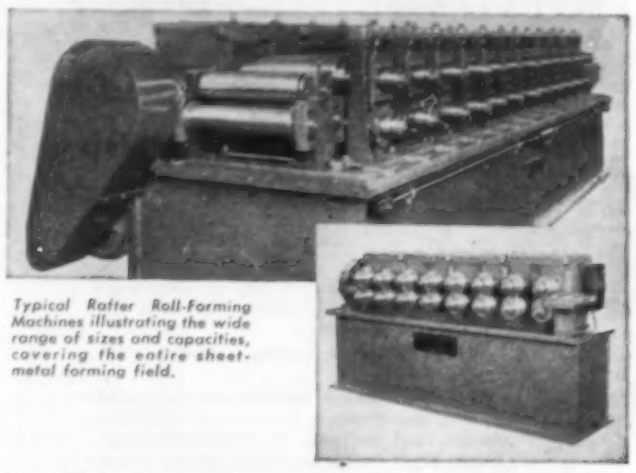
Stonehouse SIGNS, inc. MANUFACTURERS
Stonehouse Building · 842 Larimer
Denver 4 Colorado
"Signs Since 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN-10784

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency



Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities, covering the entire sheet-metal forming field.

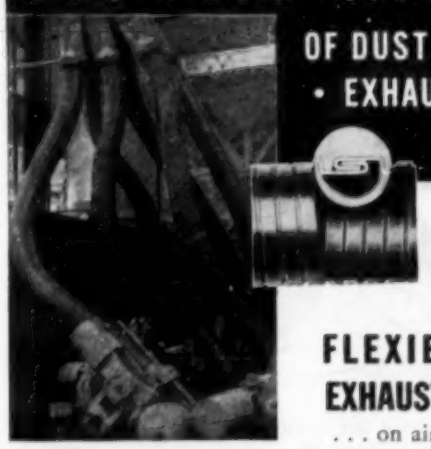
Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls . . . Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type . . . Exclusive design permits greatest vertical adjustment of the upper roll spindles, without the aid of square gearing or small complicated gears . . . Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings . . . Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street • Belleville 9, N. J.
GANG SLITTERS and PRESS BRAKE DIES

If you write maker identify as IEN-10785

FOR GOOD RIDDANCE

OF DUST PARTICLES
• EXHAUST GASES
• FUMES



CMH hose collecting dust particles on a buffer job.

INSTALL CMH FLEXIBLE METAL EXHAUST TUBING...

. . . on air blowers, in suction lines or dust collecting systems. Absorbs vibration . . . corrects for misalignment . . . can be moved easily. CMH Flexible Metal Exhaust Tubing is made of galvanized steel, brass, aluminum, etc. Standard sizes from ½" to 12" I.D. Couplings to suit needs. Write for complete information.

FLEXONICS CORPORATION
Formerly Chicago Metal Hose Corporation
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

If you write maker identify as IEN-10786

Sturdy, Strong, Band-Saw Guide

MODEL 20
Paddock BALL-BEARING BAND SAW GUIDES

GUARANTEED SATISFACTION . . . SAVES THOUSANDS OF TIMES THE DIFFERENCE IN COST . . . MORE AND BETTER WORK AT LESS EXPENSE . . . SAFETY IN OPERATION IS GAINED . . . INSURANCE COMPANIES & SAFETY COUNCILS RECOMMEND PADDOCK BALL BEARING GUIDES . . .
SHIPPED ON APPROVAL IF VALUE IS QUESTIONED
$50 PER SET F.O.B. KANSAS CITY
TOP, BOTTOM & ATTACHMENTS (OTHER SIZES FOR LARGE & SMALL MACHINES) . . . SUPPORTS ¼" TO 1¼" BLADES
2½" NECESSARY TO INSTALL

PADDOCK TOOL COMPANY
"Guide Makers Since 1920"
1418 Walnut Street Kansas City, Missouri

If you write maker identify as IEN - 10787

NICHOLSON

TRAPS for Every Plant Application

Send for Nicholson Catalog 953. This 32-page standard reference on advance-type trapping of steam, air and other mediums contains: installation diagrams, charts and formulae for determining proper trap sizes, and advice on solving specific problems. See why leading plants are increasingly standardizing on Nicholson traps for increased production and minimum maintenance.

Send for Helpful Booklet

W. H. NICHOLSON & CO.

TRAPS · VALVES · FLOATS

159 Oregon St., Wilkes-Barre, Pa.

If you write maker identify as IEN - 10788

SAVE TIME MONEY MATERIAL WORK

Chromalox Catalog 50 Shows You

The Chromalox Catalog is filled with valuable data on the use of electric heat to lower costs and increase production in your plant. It shows over 15,000 types and sizes of electric heaters for heating air and other gases, liquids, viscous fluids and solids; for heating dies, molds, platens, moving parts and other equipment. A section is devoted to the new all-metal radiant heaters for baking, curing, drying and other infrared applications. Put Chromalox Electric Heaters to work in your plant.

WRITE FOR YOUR COPY OF CHROMALOX CATALOG 50 TODAY.

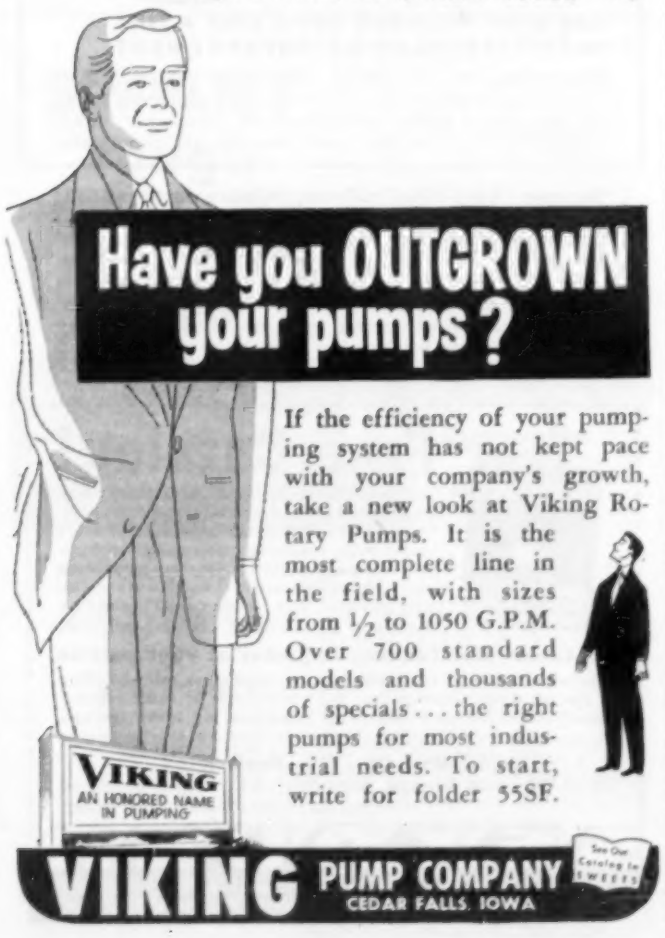
Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Strip Heaters Advertisement, Page 5

CHROMALOX IB-24

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 10789



If you write maker identify as IEN - 10790

Truck - Two wheel hand design for appliances, rides pneumatic tires

Source: HAMILTON CASTER & MFG. CO.
1700 Dixie Highway, Dept. IEN, Hamilton, Ohio

Labor Saver

Pneumatic tires measuring 10 by 3.50 in. cushion the load on this new appliance truck and permit the truck to be operated on stairways and over curbs without difficulty. Long smooth runners take the place of skids on the rear face of the steel frame. The front face is felt padded.

The truck is balanced so the load rests upon the wheels. The operator stands between the handles rather than back of them. Small hand rubber rollers are located in front of the wheels and just back of the nose to act with the wheels for easy handling in upright position. A 15-ft. web strap with a self-locking buckle secures the load in place. Rubber handle grips complete the assembly.

If you write maker identify as IEN - 10791

Welding - Consumable electrode for shielded arc welding on aluminum

Source: ALUMINUM COMPANY OF AMERICA
738 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.

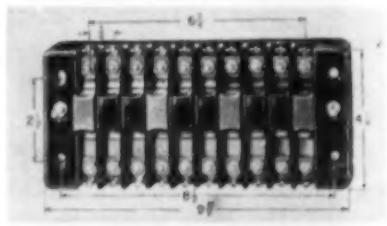
Technical data upon request

Three alloys, 2S, 43S and A54S can be specified in a new aluminum electrode wire ranging in size from 0.03 to 0.125 inch. Mill quantity orders also can be placed for wire sizes from 0.02 to 0.125 inch. The wire is wound on non-returnable fibre spools containing 10 lb. in one continuous length. The electrode conforms to AWS Specification A5.10-54T and ASTM Specification B-285-54T.

If you write maker identify as IEN - 10792

Switch - Multiple circuit unit for safe meter test application

Source: EASTERN SPECIALTY CO.
3617 N. 8th St., Dept. IEN, Philadelphia 40, Pa.



Bulletin 48

New switch employs fixed contacts and a sliding link with a non-adjustable spring whose pressure remains constant. Current-carrying parts are rigid. The plastic arc resistant base includes integral barriers between the switch elements. The plastic cover carries assembly nuts that cannot come off when the cover is removed from the base. Surface leakage distance measures 5/8 in. between the live parts and from these parts to ground. There are no live switch blades to create a shock hazard.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . See Page 50

If you write maker identify as IEN - 10793

***Now you can buy* a press brake like this "off the shelf" for $1455**

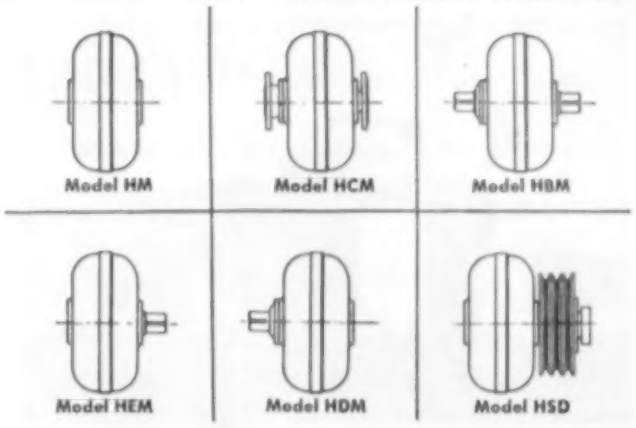
Any shop where metal is bent can now take advantage of a new convenient way of buying quality all steel press brakes. There's no need for involved proposals or a long wait for delivery. You can now buy Verson No. 16-48 (shown above) and No. 1062 brakes as easily as buying a car. Write for spec sheets on either model and then place your order.

A Verson Press for every job from 60 tons up.

Verson **VERSON ALLSTEEL PRESS CO.**

9325 S. Kenwood Ave., Chicago 19, Ill. So. Lamar at Leibetter Dr., Dallas, Tex.

If you write maker identify as IEN - 10794



Which Fluid Drive?

. . . depends on your particular job. They're *all* Twin Disc Fluid Couplings, and they *all* reduce your maintenance and downtime costs by *preventing* motor burnouts and engine lugging. They *all* cushion out shock loads, overloads, and vibrations. They also *improve* load distribution on compounded drives, and transmit *full* input torque at *all* times. For details on installations from 1/4 to 850 hp, with any type hook-up, *write for Bulletin 144-D.*

TWIN DISC

TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

If you write maker identify as IEN - 10795

New 300-watt Vitrohm ring rheostat with exclusive "twin-shoes"

Ward Leonard's exclusive sintered self-lubricating twin-shoe construction insures uniform contact pressure, plus unusually smooth and trouble-free operation.

Other features of the new 6" Vitrohm ring rheostat eliminate backlash, insure contact pressure, prevent arm over-travel or radial motion. It takes less back-of-panel space, too.

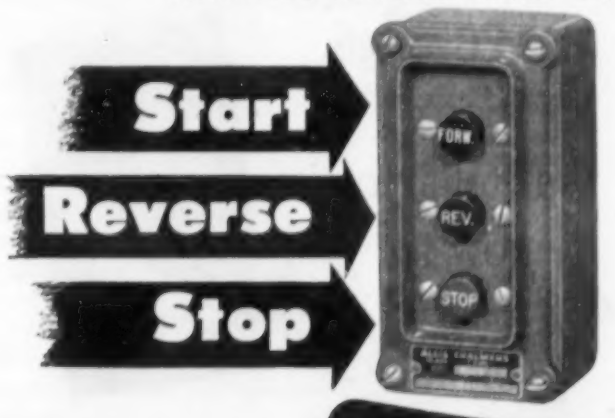
Write for Bulletin 1116, Ward Leonard Electric Company, 33 South St., Mount Vernon, N.Y. 4.13

WARD LEONARD ELECTRIC CO.

Result-Engineered Controls Since 1892

RESISTORS • RELAYS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as IEN - 10796



ALLIS-CHALMERS Pushbutton Control Stations

ALLIS-CHALMERS has a line of standard and heavy-duty pushbuttons to meet your motor starting, stopping, reversing needs. Both types are available in general purpose enclosures for surface or flush mounting and in a variety of special purpose cabinets. All have ample space for wiring, inspection and maintenance.

For complete information on the various combinations of selector switches and pilot lights available, call your nearest A-C representative or write Allis-Chalmers, Milwaukee 1, Wisconsin. Ask for Bulletin 14B7132.

A-4364

ALLIS-CHALMERS

If you write maker identify as **IEN - 10797**

FAST, ACCURATE BENDS with DI-ACRO® Hydra-Power Bender

Simple and complex bends are readily formed and duplicated in many ductile materials with hydraulically operated Di-Acro Benders. The Bender can be delivered completely tooled for bending tubing, moulding, extrusions and other solid materials. Tooling can be made in your own plant if you prefer.

SEND FOR 32-PAGE CATALOG

See Di-Acro Exhibit
BOOTH 1215
National Metal Show — Chicago — Nov. 1-5

**pronounced Die-ack-ro*

Creators of "Die-Less Duplicating"

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MFG. CO.,
318 8th Avenue • Lake City, Minn.

If you write maker identify as **IEN - 10798**

Chicago RIVET "912" AUTOMATIC RIVET SETTER CUTS COSTS 3 WAYS

1 FASTENS FASTER . . . Only the speed of the operator limits the 912's riveting speed. Completely automatic. A push on the foot pedal automatically feeds, inserts and clinches the rivet.

2 DOES WORK OF SEVERAL MACHINES Quick change rotary hopper and raceway makes the 912 adjustable in 5 to 10 minutes to set different size rivets. Adjustable anvil height and 12-inch throat provide further versatility.

3 SAVES ON MAINTENANCE . . . The 912 is massively built to stand the shocks of constant use and is designed for quick, easy servicing and parts replacement.

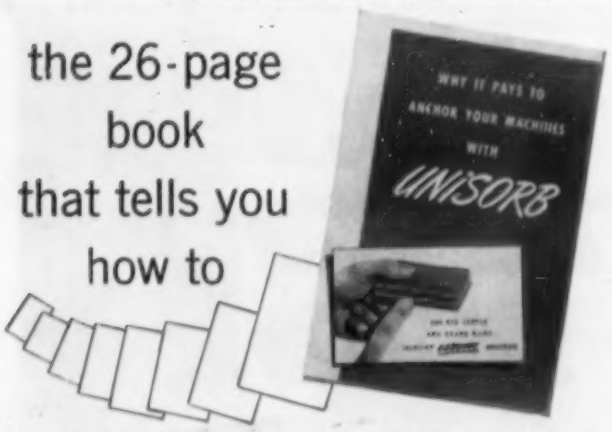
If your assembly calls for 3/16" steel tubular rivets or smaller, of 15/16" lengths or less, ask us to show you how the 912 can cut your fastening costs. Send a sample of your problem assembly (or blueprint) for a free fastening analysis.

FREE CATALOG *contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.*

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb), Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as **IEN - 10799**

the 26-page book that tells you how to



- ANCHOR MACHINES and eliminate 60-85% of transmitted vibration
- ELIMINATE DRILLING of wood or concrete floors when installing machines
- SAVE TIME and money (up to 30%) on installation costs

For your copy of this valuable book, showing actual plant installations of UNISORB®, return the coupon today.

the FELTERS company
208 South Street, Boston 11, Mass.

Please send me a copy of FACTS ABOUT ANCHORING YOUR MACHINES WITH UNISORB, at no obligation to me.

Name..... Title.....
(Please print)
Company.....
Address.....
City..... Zone..... State.....

Return to: The Felters Co., 208 South St., Boston 11, Mass.

If you write maker identify as **IEN - 10800**

Control - Pressure operated switch is weather resistant for outdoor use

Source: MERCOID CORPORATION
4201 W. Belmont Ave., Dept. IEN, Chicago 41, Ill.

Series DAW

New assembly of the company's mercury switch pressure operated control, previously described IEN-4345-53, is enclosed in a gasketed water tight housing. The housing is vented to drain condensation and the vent is shielded so water cannot enter except by complete submersion. The mercury switch contacts rate 20 watts on 110-volt ac. or dc. The unit is available for 17 operating ranges between 30 in. of vacuum and 2,500 pounds. Sensitivity is 2 oz. to 20 lb., depending on the range. Assemblies are available to open or close circuits on pressure rise. Multiple circuit arrangements can be specified.

If you write maker identify as **IEN - 10801**

Rectifying - DC power supply unit employs magnetic amplifier regulation

Source: McCOLPIN-CHRISTIE CORP.
3410 W. 67th St., Dept. IEN, Los Angeles 43, Calif.

Meets MIL-E-7894

Ten standard 28-volt production models, with capacities to 1,000 amp. in mobile and stationary designs, have been added to the Stavolt line. Each is characterized by its magnetic amplifier control, aluminum construction and use of modern core and insulation materials. Components are encapsulated. Construction is weather proof.

Control is continuously variable between 25 and 29 volts. Regulation holds within 1 per cent on variation to 10 per cent on the ac. input and load variation from zero to full rating. Several units can be connected for parallel operation.

If you write maker identify as **IEN - 10802**

Engine ignition is cut instantly, in the event of a vehicle turnover, by the action of a new Servis Turnover Switch. The new unit measures 1¼ in. in diameter by 2¼ in. in length. It installs vertically so mercury in its bowl covers stainless steel terminals in a circuit with the distributor coil on the engine. Tilting more than 45 degrees uncovers the terminals, opens the circuit and stops the engine. Service Recorder Co., 1375 Euclid Ave., Dept. IEN, Cleveland 15, Ohio lists the switch at $3.85 in lots of ten or more.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10803**

Bulletin 609 Manual Starters

- Silver alloy contacts need no maintenance
- Generous wiring space in white interior

An Allen-Bradley Bulletin 609 across-the-line starter saves maintenance time on any machine. Contacts never need cleaning, filing, or dressing—they're always ready for action. Strongly built for years and years of trouble-free operation. Thermal breakers provide reliable motor overload protection. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY QUALITY MOTOR CONTROL

If you write maker identify as **IEN - 10804**

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying **Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements.** ***Call on Foster for all your needs for Industrial Track Equipment and Supplies.***

Write for Track Equipment Bulletin IE-10

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as **IEN - 10805**

LIKE AN
ATOMIC
EXPLOSION

JUST 1/32" FAUCET LEAK MUSHROOMS INTO ATOMIC WASTE OF APPROXIMATELY

95,000

GALLONS OF WATER YEARLY!

Cost of wasted water @ $1.90 per M. cu. feet is $24.14. If the leak is in a hot water faucet then fuel cost for heating this wasted water will be: $88.91 if coal (9,879 lbs.)†; $91.08 if oil (792 gals.)†; $84.41 if gas (84,411 cu. ft.)†. These figures authenticated Hackensack Water Co.* and American Gas Association†.*

you can stop this needless waste now with Pat'd

'SEXAUER' "EASY-TITE" Faucet Washers

THE ONLY WASHERS BUILT LIKE A TIRE WITH FIBERGLAS RE-ENFORCEMENT

Fiberglas, with a melting point 1200° Fahrenheit, is unaffected by destructive heat of modern superheat water systems; has a tensile strength of 460 pounds per square inch; is non-absorbent and resists all chemicals.

'Sexauer' "Easy-Tites" outwear ordinary washers 6 to 1! . . . Now available with a greatly improved special duPont COMPOUND which adds substantially to longer, trouble-free washer service. This COMPOUND keeps washer from going to pieces under extreme hot water, withstands impurities and has superior tensile strength. 'Sexauer' "Easy-Tites" won't spread, split or "mush-out." They outlast all other washers by 6 to 1; save labor on 5 REPEAT REPAIRS, water and fuel and prolong fixture life.

Send for your

Free Catalog!

For water savings, lower maintenance and fuel costs, write for new Edition H. 'Sexauer' "Easy-Tite" washers just one in over 3,000 TRIPLE WEAR plumbing repair parts and tools. It's today's accepted guide for purchasing and maintenance men in thousands of PLANTS, INSTITUTIONS, AND GOVERNMENT AGENCIES that rely on 'Sexauer' repair materials.

'Sexauer' Maintenance Engineer at your service

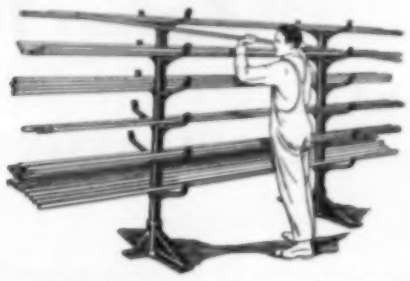
There's a 'SEXAUER' TECHNICIAN within your quick call who offers a special SURVEY SERVICE that sets up schedule of exact replacement parts for your plumbing regardless of make or age. A postcard will bring him and your NEW catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K104
2503-05 Third Avenue, New York 51 *as advertised in THE SATURDAY EVENING POST*

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 10807

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

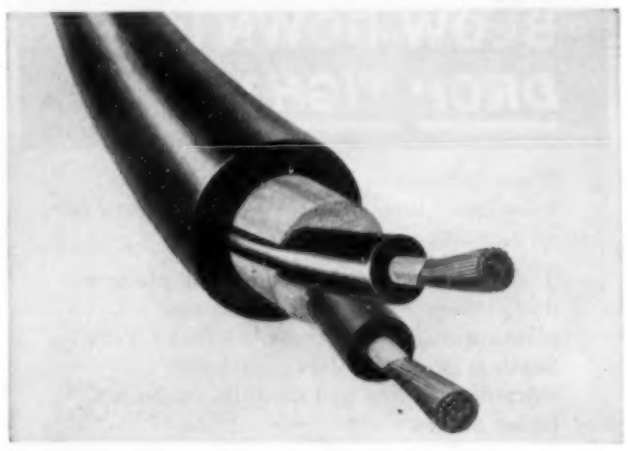
Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 10808

PORTABLE CORD

Neoprene-jacketed Securityflex takes abuse, won't kink, flexes indefinitely



Securityflex* is available as a heavy duty portable cord of one to six conductors, or as a lightweight cord for small tools and lamps. Tough, dense neoprene jacket resists flame, heat, sunlight, aging, ozone, oils, solvents, chemicals and acids . . . protects against cutting, abrasion and crushing. It's so rugged it's used on mine drills! Securityflex delivers safe, adequate power . . . stands up under the toughest conditions. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.*

*Trademark

ANACONDA® today's headquarters for wire and cable

If you write maker identify as IEN - 10809

SIMPLIFY tough PULLING jobs

Pull Rod or Screw Inserted through UNIQUE "CENTER HOLE"

Ram is drawn in a straight, torque-free pull through Ram. Ram is its own back up! Less rigging time — more effective power!

10 to 100 ton capacities.

*"Center-Hole" in Rams of 30-ton and greater capacities.

Simplex Re-Mo-Trol

HYDRAULIC PULLERS
PUMPS AND REMOTE CONTROLLED RAMS

If it can be pulled, Re-Mo-Trol can pull it—easier and faster! Pulls liners, sleeves, shafts, gears, etc. SAFER remote control. Also lifts or presses. Can save its cost on a single tough job!

WRITE FOR BULLETIN: HYDRAULIC 51

Simplex Jacks

TEMPLETON, KENLY & CO.
2527 Gardner Road • Broadview, Illinois

If you write maker identify as IEN - 10810

Boiler - Self-contained design rates 40 bhp., burns oil or gas or both

Source: CYCLOTHERM DIVISION
163 E. First St., Dept. IEN, Oswego, N. Y.

80 per cent efficient

Model C1400 is new assembly of the Cyclotherm 40-hp. packaged steam boiler. The control box, formerly mounted on the skids, has been moved up to eye level on the boiler housing. The water column is mounted on the left-hand side. There are three sq. ft. of heating surface per horsepower. The boiler can be installed in a space measuring a little over 9 ft. in length, about 5½ ft. in width and a little under 5 ft. in height. No stack is required for satisfactory operation.

If you write maker identify as IEN - 10811

Painting - Atomized aluminum in liquid vehicle for metal and wood

Source: WOODHILL CHEMICAL CO.
1391 E. 33rd St., Dept. IEN, Cleveland 14, Ohio

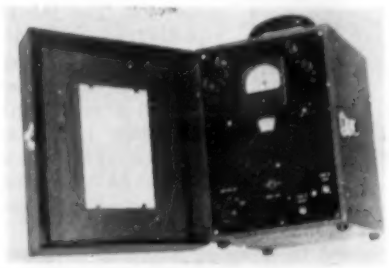
Data and prices upon request

Duro Aluminum Shell designates a new aluminum paint for decorative and protective application over ferrous, nonferrous and wood surfaces. The liquid vehicle evaporates to leave a non-porous aluminum film that dries dust free within an hour and to a metallic hardness in six hours. The film will withstand flexing and extremes of heat and cold.

If you write maker identify as IEN - 10812

Testing - Portable instrument reads electrical resistance in ground

Source: ASSOCIATED RESEARCH INC.
3762 W. Belmont Ave., Dept. IEN, Chicago 18, Ill.



Bulletin 1-2

Soil types in the earth's substrata are determined by surface resistance measurements employing this new Model 274 Vibroground. Readings are obtained by balancing a galvanometer null detector and observing the indication on the scale of a dial-type potentiometer. The instrument is operated by dry cells. The measuring circuit is basically a bridge. A new low range of 0 to 0.4 ohm has been added to the series of ranges between 0 and 4,000 ohms in previous designs. Assembly is in a steel case. Size is about 12 by 9 by 10 inches. Weight is 20 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10813

NEWLY DESIGNED TRAP

virtually eliminates maintenance!

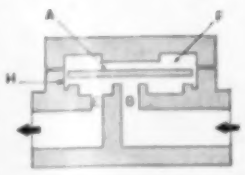
Most striking feature of this trap is its simple design. Only one moving part—a solid stainless steel disc—virtually eliminates maintenance.

The trap is small, easily installed, immune to water hammer, vibration and corrosive elements. Uses same valve seat and head for all pressures to 600 psi and temperatures to 950°F.

Check these advantages to your own satisfaction. Write today for a 60-day trial giving size, capacity and pressure conditions.

SARCO COMPANY, INC.
EMPIRE STATE BLDG., N. Y. 1, N. Y.

SARCO
Thermodynamic
TRAP



HOW IT WORKS!

Air and/or condensate raise valve seat disc A, discharge thru E. When steam follows, greater velocity causes it to strike body at H thus building up pressure in chamber F. This causes disc to seat, closing tube B. As pressure in F decreases by condensation, pressure in tube B raises disc and cycle is repeated.

2099-F

If you write maker identify as IEN - 10814

SINCE 1914 designers and manufacturers of Standard and Special **TRANSMISSIONS, SPEED REDUCERS** for farm tractors industrial cranes shop trucks, lift trucks, agricultural machinery road builders machine tools etc., also **MACHINE TOOL DRIVES** for motorizing cone driven standard or special machines. The services of our Engineering Department are at your disposal.

up to 100 h. p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Belt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO. — 4474 BEAUBIEN — DETROIT, MICHIGAN

If you write maker identify as IEN - 10815

Only one Yale Gas Truck . . .

but as many handling jobs as your operation requires

9:30 AM

11:15 AM

1:30 PM

3:45 PM

Versatile is the word for time-and-money-saving YALE Gas Trucks. Yes, one YALE gas truck . . . with interchangeable attachments . . . can perform a variety of handling jobs daily . . . do it faster—safer—at less cost.

Yale Electric Trucks do everything the Gas Trucks do . . . can be fitted with all YALE attachments . . . are efficient, economical and trouble-free. Capacities to 100,000 lbs. And before you buy *any* electric truck, look into the big news about YALE's new Safety Silhouette Electric Truck—with exclusive safety features you've never seen before!

*Reg. U. S. Pat. Off.

YALE*

INDUSTRIAL LIFT TRUCKS AND HOISTS

Write for further information to The Yale & Towne Manufacturing Company, Philadelphia 15, Penna., Dept. 3610

Gas, Electric, Diesel & LP-Gas Industrial Trucks
Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

If you write maker identify as IEN-10817

Rolling Steel Doors

More Practical from Any Standpoint!

No matter how you look at it, no other type of door meets present day requirements as fully as a good power operated Rolling Steel Door. For motor freight loading docks, and other truck and railroad openings in industrial and commercial buildings, these quick opening, quick closing Rolling Steel Doors offer more desirable features than any other type of door. Their vertical roll-up action saves valuable space—there are no overhead tracks or other obstructions to interfere with crane handling adjacent to door openings. All metal construction of Rolling Steel Doors provides permanence, greater protection against intrusion and fire, and it assures you a lifetime of trouble-free service. For information write for Catalog No. G-54.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN-10818

WEBB

TOWVEYOR*

for FASTER, SAFER & EASIER MATERIALS HANDLING

FASTER travel from loading to unloading stations—trucks are delivered to proper destination without wasted traveling time.

EASIER handling—trucks engage Towveyor chain by lowering tow pin and are disengaged at any point by raising of tow pin.

SAFER floors—Towveyor eliminates overhead chains and supports and employees can safely walk or truck over any portion of the system.

Cut your costs with a Towveyor system that will efficiently speed up your materials handling.

*Towveyor is a registered trademark identifying floor truck conveyors patented, manufactured and installed by the Jervis B. Webb Company.

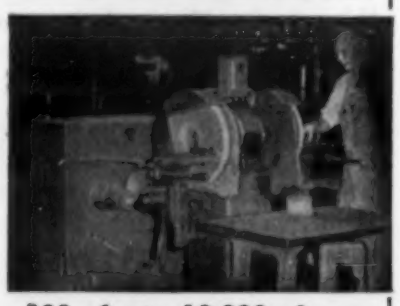
JERVIS B. WEBB CO.
Conveyor Engineers and Manufacturers
8915 ALPINE AVE. • DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN-10819

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN-10820

Heating - Convection oven for temperatures to 650 and 850 deg. F.

Source: BURDETT MFG. COMPANY
3433 W. Madison St., Dept. IEN, Chicago 24, Ill.

Details on request

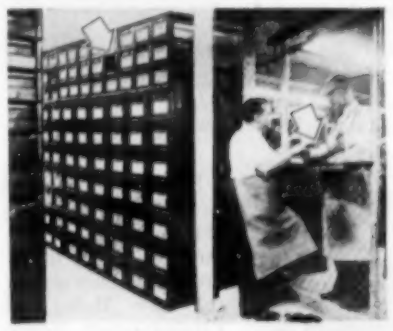
Series H, for horizontal air flow, and Series V, for vertical flow, make up a new line of electrically heated or gas fired convection ovens for precision laboratory testing and for small parts production. In Series H, the heating equipment and motor driven blower are located in a chamber beneath the work chamber to draw air down on one side of the work chamber and deliver it upward on the other side for horizontal movement from the inlet to the outlet. In the vertical design the heating elements are mounted in a vertical chamber at the rear of the work chamber and the air is picked up from the top of the work chamber, driven down around the elements for return upward from the bottom.

Work chamber, dimensions are 20 by 20 by 20 in. and 38 by 26 by 38 in. in the two horizontal units. They are 26 by 26 by 38 in. and 26 by 38 by 50 in. in two vertical designs. The electrically heated assembly ranges from $545 to $1,037 with input on a 220-volt 3-phase circuit and air circulating capacity at 400 to 1,000 cfm. Electric input is 8 to 20 kw. The vertical assembly lists at $695 to $1,024 with air circulating capacity at 600 to 1,200 cfm. and input at 10 to 20 kw.

Standard equipment includes two reinforced expanded metal shelves and support angles on 3-in. centers. Standard interior finish is 1,000 deg. F. silicone aluminum paint.

If you write maker identify as IEN-10821

We offer a new illustration to show the operation of Stackbin steel boxes and racks more clearly than we did show them, for tool storing and handling, in IEN-7854-54. The boxes assemble in the racks in a tool crib. Each box contains the tools and instructions for a given job. The job is identified by code number and, if desired, by a list of the tools on a card that slides into place on the box front. An operator calls for the "job" box and the tool crib attendant gives it to him as illustrated.



The tool set can be checked in when it is returned to see that it remains complete or to make the necessary additions. Four box sizes measure 5½ by 10¼ by 4½ in. to 12 by 16½ by 9½ inches. List price for the box and its channel rack is $2.20 to $3.96 each in lots of 100 or more. The label holder adds 25 cents per box. Adapters to interstack different sizes are $1 per set. Manufacturer is Stackbin Corporation, 1077 Main St., Dept. IEN, Pawtucket, R. I.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-10822

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG

eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 11/16" diameter, one for 11/16" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine Works,** 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN-10823

Less than 2¢ *per* 100

to SANITIZE GOGGLES *and* RESPIRATORS

Available in 6-oz. bottles, the new high potency CESCO DISINFECTANT CONCENTRATE mixes instantly with water to form a solution which will sanitize safety glasses, goggles, and respirators at a cost of less than 2¢ per 100 articles. It is no more injurious to plastic or metal than water. It is *non-irritating* to the skin and *non-toxic* in normal use. Registered with the U. S. Department of Agriculture.

CESCO CONCENTRATE is easy to use. One ounce poured from the metered bottle makes four gallons of effective solution. After immersion, articles are air-dried and become safe for immediate re-use.

See your CESCO safety equipment distributor or write us for further information.

CESCO

CHICAGO EYE SHIELD COMPANY
2326 Warren Boulevard
Chicago 12, Illinois

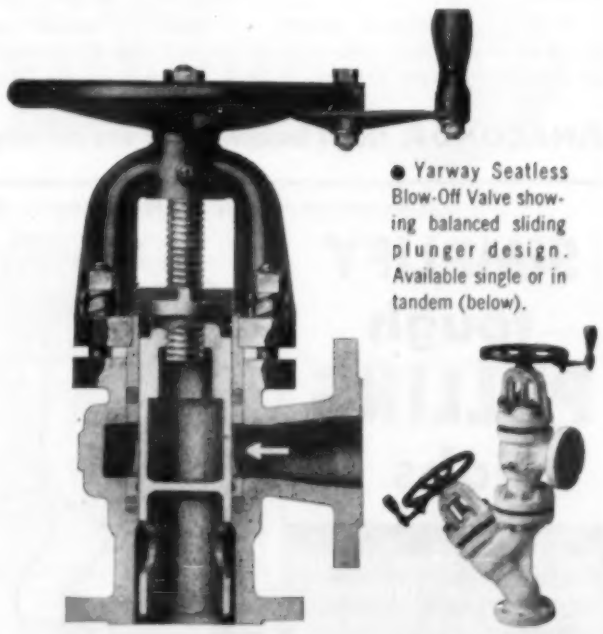
If you write maker identify as IEN-10824

KEEPS BOILER BLOW-DOWN LINES *DROP TIGHT*

Yarway Seatless Blow-Off Valves keep blow-down lines *drop tight* because *there is no seat to score, wear, clog or leak.*

The well-known balanced sliding plunger design—combined with the newest metallurgical developments—make Yarway Seatless Blow-Off Valves rate top efficiency for low and medium pressure boiler plants.

Among high pressure plants, Yarway Unit Tandem Valves are used by more than 4 out of 5.



● Yarway Seatless Blow-Off Valve showing balanced sliding plunger design. Available single or in tandem (below).

If you operate a boiler, be sure to send for the Yarway Blow-Off Valve Books—Bulletin B-426 for pressures to 400 psi or Bulletin B-433 for higher pressures to 2500 psi. Write . . .

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.
BRANCH OFFICES IN PRINCIPAL CITIES

YARWAY blow-off valves

If you write maker identify as IEN - 10826

Maintenance men especially, welcome these new short drills, ⅜" and ½" capacity. Here at last, are drills they can take into crawl spaces, behind heavy machinery, in any tight corner. These two new Stanleys measure 12¼" and 12-3/32" with "D" handles attached . . . with handles removed (a quick, easy job) they're only 9⅞" and 9¾".

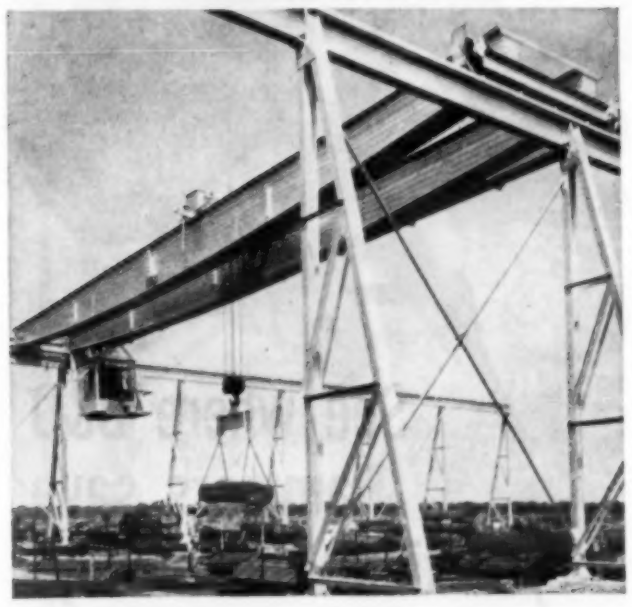
*Typically Stanley in design and material, both drills have full anti-friction ball and needle bearings and alloy steel gears. No. 123 drills up to ½" in steel, 1⅜" in wood and turns 550 r.p.m. No. 383 drills ⅜" in steel, 1⅛" in wood at 800 r.p.m. Both new light weight short drills have the easily wiped, high polish, Stanley finish.

See your Stanley distributor, or for further information write Stanley Electric Tools, 414 Myrtle St., New Britain, Conn.

STANLEY ELECTRIC TOOLS

If you write maker identify as IEN - 10827

Stop Overhead Cranes
EASILY, SAFELY

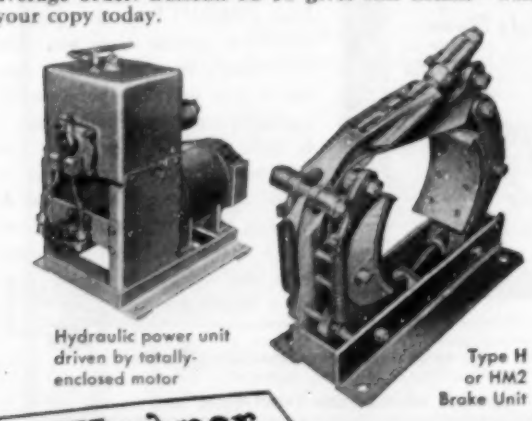


with Wagner Powered Hydraulic
CRANE BRIDGE BRAKES

Hydraulic braking systems for overhead traveling cranes—pioneered by Wagner—have become an industry standard. Now, Wagner offers *Powered* Hydraulic Crane Braking for safer, more efficient operation where frequent starts and stops are necessary . . . where close spotting is required . . . where heavy equipment is involved . . . and for any application where exceptional ease of brake operation is desired.

Wagner Powered Braking Systems save you money because they lengthen the life of your equipment. Operators don't drag brakes and unnecessarily wear wheels and lining—cranes can be controlled without bridge motor plugging with its resultant damage to both motor and gears.

These Power Units can be added to your present Wagner Hydraulic System. Only six weeks are required to fill the average order. Bulletin IU-36 gives full details—write for your copy today.



Hydraulic power unit driven by totally-enclosed motor

Type H or HM2 Brake Unit

Wagner Electric Corporation EST. 1891

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

154-2A

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 10829

Motor - Shaded pole design, high starting torque, 1/40 to 1/6 hp.

Source: NORTHWESTERN ELECTRIC CO.
1750 N. Springfield Ave., Dept. IEN, Chicago 47, Ill.

3000 rpm. loaded

Patented reluctance slot, in conjunction with the shading coils in this new motor, results in high starting torque and removes the dip that is usual in the speed-torque curve of a shaded-pole motor. The new unit is suited for application where space is limited because of a short length and offset shaft. Shaft, mounting studs and fan can be modified to meet given requirements.

Typical applications are in drive for washing and ironing machines, oil burners, centrifugal pumps, fans and blowers, recording apparatus, food mixers, home workship equipment. Operation is on 110-volt 60-cycle single-phase ac. on continuous duty. The bearings are sleeve design.

If you write maker identify as IEN - 10830

Carbide Parts - Hot pressed units held to close dimensional tolerances

Source: SINTERCAST CORPORATION OF AMERICA
134 Woodworth, Dept. IEN, Yonkers 2, N. Y.

Illustrated data upon request

Sinterforge SF designates a new line of hot pressed tungsten carbide parts such as drawing dies, bushings, mandrel tips, core rods for powder metallurgy. The parts are characterized by their close dimensional tolerances that eliminate need for further finishing in most cases. The parts are available in all grades of tungsten carbide that are normally employed in hot pressed products.

If you write maker identify as IEN - 10831

Storing - Expanded metal locker for ventilation, interior visibility

Source: PENN METAL CORP.
50 Oregon Ave., Dept. IEN, Philadelphia 48, Pa.

Folder SE-39

Expanded steel in 14 gage thickness and ¾-in. diamond openings is flattened and employed in the door, back and sides of this new locker. It is secured in an angle frame. Solid steel top, shelf and bottom, door hinges, a lock, hanger bar and hooks complete the assembly. Width and depth are 12 to 24 in. in a single tier design measuring 60 or 72 in. in height. Width is 12 or 15 in. and depth is 12, 15 or 18 in. in a double tier design 36 or 42 in. in unit height. Two types include the wire mesh all around or in the door only. Trade name is Air-Lite.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10832

If you write maker identify as IEN - 10833

NEW PUSH BUTTON KIT

EASY to Identify
EASY to Buy
FASTER to Install

OTHER KITS: Selector Switches, Interlocks, Replacement Parts, Contacts, Coils, Overload Relays

Write for Bulletin 9999. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wis.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 10834

NEW DESIGN IDEAS

for using neoprene, Du Pont's chemical rubber, are suggested by reports on how new products are developed . . . old ones improved . . . in every issue of the free

"NEOPRENE NOTEBOOK"

Mail the reader service card to get on the mailing list

DU PONT

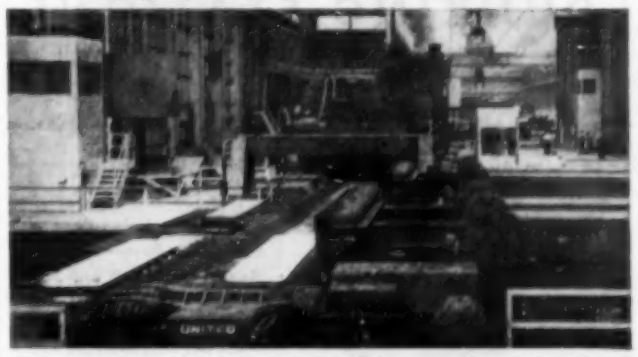
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

NEOPRENE

The rubber made by Du Pont since 1932

If you write maker identify as IEN - 10835

24 HOUR BLOOMING MILL OPERATION REQUIRES OKONITE CABLES



The entire blooming mill, from the 5,000 hp motors for the two rolls to the control circuits is wired with Okolite-Okoprene.

Every piece of equipment, including electrical wires and cables, was selected for 24-hour-a-day operation at the new blooming mill of the Granite City Steel Co. in Granite City, Ill. High and low voltage circuits are all wired with Okolite-Okoprene, the mold-cured, rubber-insulated cable that has established a reputation for dependability and long service life in *every* industry.

For information on Okolite-Okoprene cables, write for Bulletin IE-9000. The Okonite Company, Passaic, N. J.

2355

OKONITE insulated cables

If you write maker identify as IEN-10836

A Motor for LOW SPEED OPERATION

If you are now manufacturing a product or developing a product where you need motion at slow speed, here is the motor for you. Hundreds of thousands now in use on cooking appliances, vending, coin operated, amusement, and advertising displays.

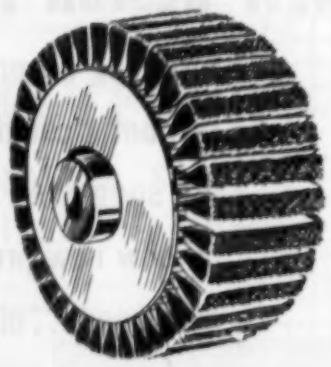
These AC gear motors are precision built and are being manufactured in volume for immediate delivery. For further information, send the requirements of your application to us. Special motors are built to meet your new product needs. Write today for data sheet.

MotoRESEARCH COMPANY
1600 JUNCTION AVENUE
RACINE, WISCONSIN

Designers and Manufacturers of
SPECIAL INDUCTION MOTORS

If you write maker identify as IEN-10837

THIS MAY BE THE ANSWER TO YOUR FINISHING PROBLEM!



We say this because the Vonnegut Brush-Backed Polishing Head is designed especially for polishing curved and formed surfaces . . . and because it is an excellent deburring tool. It is used directly on die casting metals, aluminum, brass, bronze and steel—but it is equally efficient for removing bubbles and other blemishes and feathering out such areas on enameled or painted surfaces. Its basic versatility is enhanced by a wide choice in grade and grit of abrasive loadings. It's a unique device available in two models, for portable tools or fixed spindle operation. Write for the Vonnegut Polishing Head bulletins.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U. S. A.

If you write maker identify as IEN-10838

Drown Fire Hazards With DUNKING STATIONS

Cigarets, Cigars Matches, Etc., Immediately Extinguished!

It's not the cigaret or cigar that's being smoked that causes fires—it's after they're discarded and forgotten that they become a terrible fire hazard!

SIPCO DUNKING STATIONS end this fire hazard once and for all by immediately drowning every last dangerous spark.

Built of rugged heavy cast aluminum, they are designed to hold water for this purpose—and they can never rust through or wear out! GUARANTEED NOT TO BREAK!

Although they are built for heavy industrial use—and abuse—you'll find that your employees will use—not abuse these DUNKING STATIONS!

UNIT NO. 1—Canister, sign, upright & base.
UNIT NO. 2—Canister & sign (illustrated).
UNIT NO. 3—Canister alone.

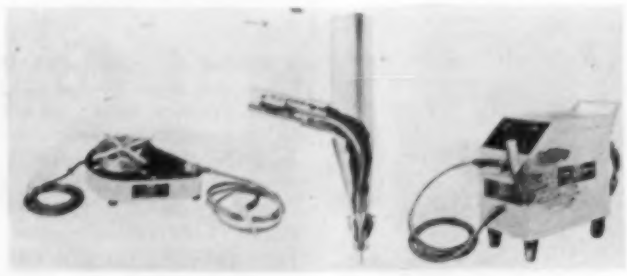
Write for Descriptive Literature

STANDARD INDUSTRIAL PRODUCTS CO.
116 South Garfield Ave. Dept. N Peoria, Illinois

If you write maker identify as IEN-10839

Welding - Hand held arc equipment feeds wire electrode and welding flux

Source: AMERICAN BRAKE SHOE CO.
230 Park Ave., Dept. IEN, New York 17, N. Y.



Portable and cabinet assemblies

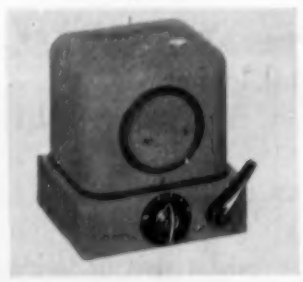
Type MF designates a new wire-electrode feed and arc-control device with a hand-held welding head that includes a hopper to hold and feed magnetic flux. The equipment connects to a conventional ac. or dc. arc welding machine rating 150 to 500 amperes. It feeds the electrode wire to the work through a flexible 14-ft. tube terminating in the head and a flux container.

The operator presses a button to feed the wire through the nose end of the head so it projects a little to strike the arc. The feed circuit is closed as soon as the arc is struck and the wire is fed in step with the arc length maintained by the operator. Closing the feed circuit also sets up a magnetic field around the wire that draws magnetic flux through the circle of retarding permanent magnets in the hopper throat. The flux clings to the wire until it is consumed in the arc.

If you write maker identify as IEN-10840

Communicating - Master station and remote stations for two way talk

Source: CAMBRIDGE COMPANY
2561 N. Clark St., Dept. IEN, Chicago 14, Ill.



Economy Master

Instant warm-up characterizes the action of the electronic tubes employed in this new Model M-5A and M-5B communicating equipment. As a result there is no lag following a cold start and no need to keep the power circuit closed except while the equipment is actually in use. Operation is on connection to a 110-volt ac. power source. Separate masters or master and sub-stations can be spaced to 1,000 ft. apart.

Model M-5A is designed for a private installation and employs a three-position talk lever in addition to its station selector. The first position is standby, awaiting calls. The circuit is open so no power is used. The lever is depressed to third position to establish communication within one second. It is left on second position where the tubes are operated at negligible input on half voltage awaiting a call. Depressing it from second to third is accompanied by immediate readiness for two-way talk.

Model M-5B is non-private. It employs a two-position switch omitting the half-voltage position. Dimensions of the master station in both designs is 6 by 6 by 7 inches. Finish is in gray wrinkle lacquer.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-10841

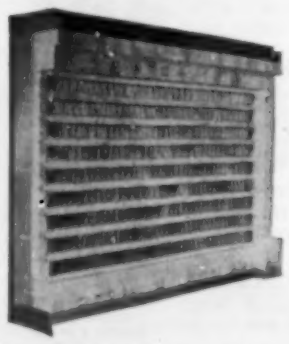
A RADIANT HEAT SOURCE, *Easily Installed*

"FOLDED-and-FORMED" Heating Elements

are quickly, easily installed in furnaces, ovens, kettles, etc., to assure a heat source unequalled for quick rise to temperature; long-life efficiency; low-cost maintenance and repairs.

STANDARD RACKS

Size 12" x 12". Installed vertically or horizontally, side-by-side, end-to-end, or in banks, to meet K. W. requirements. Five-year guarantee, at temperatures to 750° F. or 1300° F.



CUSTOMBUILT RACKS

Available in wide range of sizes and combinations, to fit any flat or curved area, to provide maximum K. W. at temperatures to 1800° F.

Hundreds of different applications are demonstrating the outstanding efficiency and economy of "F-and-F" Heating Elements. You, too, can use them *profitably!*

TREN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA 27, PA.

If you write maker identify as IEN-10842

Draw from the Nutting Library of Material Handling Helps

Jr. Catalog 54 G—General Purpose, Warehouse Trucks, Casters and Wheels
Bulletin 48 JS—Jacks and Skids for Mobile Storage
Bulletin 54 DJ—Dairy Industry Trucks
Booklet 53 SR—General Purpose Trucks and Barrel Handling Equipment
Bulletin 53 SC—Trucks for In-Plant Feeding
Bulletin 54-TL—Trucks for Use with Overhead or Under-Floor Powered Conveyors.

Nutting Since 1891

63 years of materials handling "know-how" are built into over 1000 models of Nutting Trucks. You benefit by perfect adaptability to the job, easier handling, long life and minimum maintenance. Write for the literature that covers your problem.

Export Sales Representative:
SCHEEL INTERNATIONAL, INC.
4237 North Lincoln Ave., Chicago 18, Ill.

NUTTING TRUCK & CASTER CO.
2015 DIVISION ST., FARIBAULT, MINN.

If you write maker identify as IEN-10843

See where B&D Hammers save you time and money!

From drilling in concrete and lagging-down machines to chiseling castings and holing-through walls, B&D Electric Hammers get more jobs done faster, better, cheaper! No other Hammers have so many features for comfort and safety. No other Hammers give you so much working power in so little weight at such low price! Get the facts on how to save with B&D Hammers. No other Hammers do so many hundreds of jobs in industry so *well*—in drilling, digging, piercing, breaking!

NEW BOOK shows how!

Get this great B&D Hammer Handbook *FREE*!!! Page after page of on-the-job photos *show* you how you can save time, cut costs on dozens of jobs in your operation! In lagging-down . . . in channeling . . . in scaling . . . in smashing . . . in breaking . . . *wherever* impact is called for. Write: THE BLACK & DECKER MFG. CO., Dept. 608, Towson 4, Maryland. Meanwhile, ask your B&D distributor for a demonstration!

For nearest distributor, see "Tools-Electric."

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker
PORTABLE ELECTRIC TOOLS

If you write maker identify as IEN - 10845

VANE TYPE TURBINE PUMPS

FOR BOILER FEED & LP GAS TRANSFER

Face-Mount and Flexible-Coupled Types

For pumping hot and cold, clear and vaporous liquids. Standard and self-priming models for pumping capacities up to 58 gpm and against heads up to 800 ft. Used for liquid circulating, transfer and boosting, boiler feed and condensate return service. Easy and economical to apply, operate & maintain.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
301 West Avenue 26
Los Angeles 31, California

New York; Indianapolis; Chicago; St. Louis; Atlanta; Dallas, Plainview and Lubbock, Texas; Los Angeles, Fresno, Calif.; Phoenix; Albuquerque, New Mexico.

If you write maker identify as IEN - 10846

"SPOT the Light where you want it... LIGHT the Spot where you need it."

SWIVELIER *Adjustable*
COOLITES
PREVENT BURNS
STAY COOL Using 100-Watt Lamp

SWIVELIER FLUORESCENT
DEXTRA-LITES
Adjust to any position

Made with the UNIQUE, SPRING-TENSION SWIVELIER SOCKET

• ALL WIRES ENCLOSED

• For full details on Coolites, fluorescent and incandescent "Dextra-Lites" and other fine Swivelier Industrial Lighting Units
Write: Dept. IE-O for Bulletin 134.

SWIVELIER COMPANY, Inc.
43—34th St., Brooklyn 32, N. Y.
Showroom: 30 Irving Place, New York N. Y.

If you write maker identify as IEN - 10848

Lighting - Incandescent fixture employs glass sealed silver reflector

Source: LIGHTING RESEARCH LABORATORIES
54 Ridgewood Drive, Dept. IEN, Youngstown 12, Ohio

For general lighting duty

Illustrated, from left to right, are three assemblies in the company's new line of incandescent lighting fixtures for interior and exterior plant use. To the left is a floodlight for 500 to 1,500-watt lamps. In the center is a Hi-Bay unit that will take 500 to 1,500 watt lamps and also the Type H 400-A1 mercury vapor lamp. To the right is an assembly for low bay installation to take medium base lamps rating 200 and 300 watts. Diameter is 16⅞ in. over the glass dust proof cover in each case. List price, without the lamp, ranges from $24.50 to $29.50.

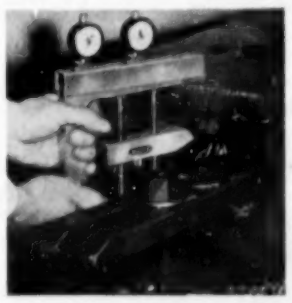
Feature in the construction is the silver light intensifying reflector. It is hermetically sealed between two walls of glass and mounts as a unit in adjustable hangers inside the white porcelain enameled steel housing. The reflector is positioned correctly for the focal beam. Tests indicate approximately double the useful light output for a given watt rating than is produced when the intensifying reflector is omitted. The optional dust proof convex glass cover is sealed with a rubber gasket and is held in place by a lever type rim lock for quick access to the interior when lamp changing is required.

The Hi-Bay unit is available with hook and loop fittings and a plug-in receptacle so the fixture can be removed for cleaning and replacing. Lowering equipment also can be specified.

If you write maker identify as IEN - 10849

Testing - Portable instrument for Rockwell A to G hardness readings

Source: AMERICAN MACHINE & METALS INC.
554 12th Ave., Dept. IEN, East Moline, Ill.



Bulletin RH-11-54

Illustrated is Model PHT-1 in the company's line of portable hardness testers, now available in two sizes. The unit shown tests specimens to 4½ in. in diameter. The larger Model PHT-2 rates to 12 inches. Throat dimension is 2¼ and 6 inches. Weights are about 3½ and 11 pounds. Both models provide for readings on the Rockwell A to G scales with major loads at 60, 100 and 150 kg.

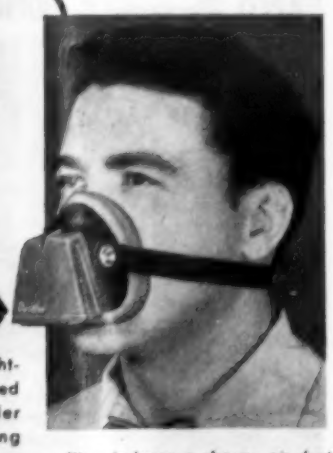
Application starts with clamping the instrument on a work piece. Then the minor load is imposed and the pointer is set. Loading is continued to apply the major load. Then the instrument is returned to the set point and hardness is read direct in Rockwell numbers. Flat, curved, inside and outside surfaces can be tested.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10850

STOPS DUSTS *Electrostatically*

McDonald **dustfoe #55** RESPIRATOR



Really tops in dust protection. Lightweight (less than 3 oz.)—engineered for perfect balance. Filter-holder width reduced 50%, eliminating "blind spots." "Static-Web" throw-away filter induces a charge on dust particles—increasing normal filtering action. Aluminum face-piece, rubber cushioned, may be formed to fit any face. Every part replaceable.

WRITE FOR BULLETIN AND PRICES

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 10851

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

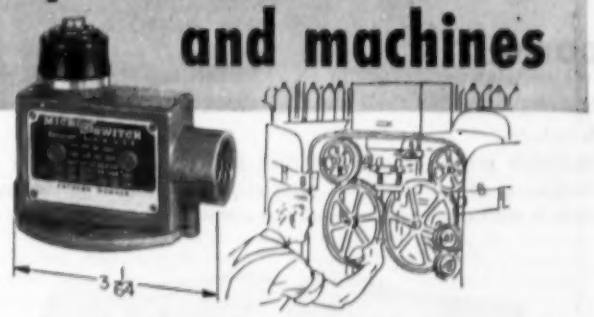
★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 10852

MICRO SWITCH Precision Switches
A PRINCIPLE OF GOOD DESIGN

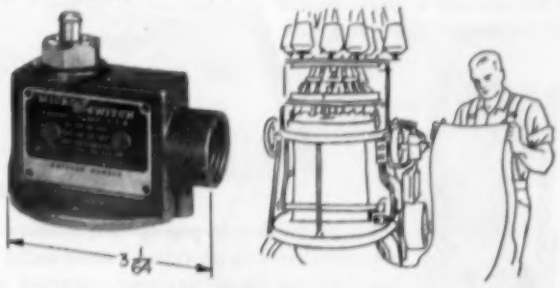
Plants find profits in MICRO SWITCH protection for men and machines



• Plugging of danger sources—both for operators and machines—with MICRO SWITCH precision switches is common practice of progressive plant operators.

This employee can't get his fingers caught in the gears. The MICRO SWITCH precision switch turns off the power when he opens the door.

But safety is only one way MICRO SWITCH products contribute to more production from present machinery. Used as limits and interlocks, they make all kinds of machines more automatic and efficient. Stocks of switches are available at the MICRO SWITCH distributor near you.



• Thread breakage on a knitting machine can be expensive. R. E. Miller, plant superintendent of the E-Z Mills at Carterville, Ga., figures two of these MICRO SWITCH precision switches are saving him $50 a year per machine. He installs them to replace stop motions and mechanical stops that often failed when thread breakage occurred.

Like Mr. Miller, hundreds of plant operators are saving important money by the use of MICRO SWITCH products to make equipment more automatic, safer and more productive.

Purchase these switches from the MICRO SWITCH distributor in your town. For technical information contact the field engineer at your nearest MICRO SWITCH branch office.

MICRO SWITCH
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
FREEPORT, ILLINOIS

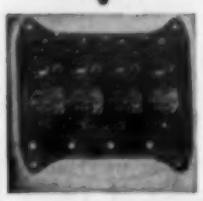
If you write maker identify as IEN-10854

means wasted fuel

The designing engineer, the mechanic and the pilot, all find Cambridge Exhaust Gas Analysers essential for developing, adjusting and operating internal combustion engines. These instruments make available continuous indication of air-fuel ratio of the mixture being supplied to the engine.

exhaust gas tester

determines the completeness of combustion in one or all cylinders. This rugged and accurate instrument is conveniently portable for field and shop use.



aero mixture indicator

is a flight instrument for installation in single or multi-engine planes. Its use makes possible greater pay load, cruising radius and safety.

Send for literature

CAMBRIDGE INSTRUMENT CO., Inc.

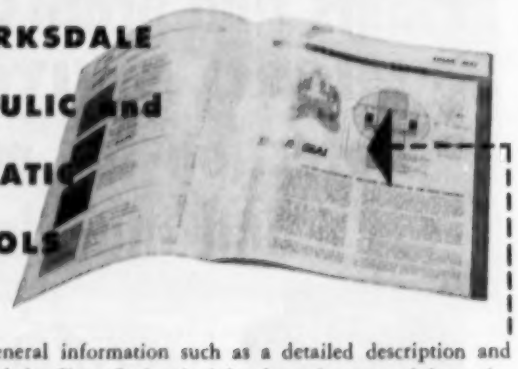
3710 GRAND CENTRAL TERMINAL, NEW YORK 17, N. Y.

Pioneer Manufacturers of Precision Instruments

If you write maker identify as IEN-10855

FREE to Design, Plant, and Safety Engineers

A NEW, COMPLETE REFERENCE FILE OF BARKSDALE HYDRAULIC and PNEUMATIC CONTROLS



It includes important general information such as a detailed description and illustration of the Shear-Seal principle, the only new valving principle in centuries; covers manual and solenoid valves.

It contains a simplified chart for pressure switch selection, which sheds new light on a subject shrouded in mystery.

It presents the only line of solenoid-pilot valves for air and low pressure liquid with a guarantee for longer solenoid and valve life.

Down to the handy pop-up tab, nothing has been overlooked in providing a more useful reference to the design engineer concerned with hydraulic components.

Use the coupon below to get your *free* copy of this valuable information, indispensible to modern hydraulic control.

BARKSDALE VALVES

5125 ALCOA AVE., LOS ANGELES 58, CALIF.

Please send a copy of the above described *Free* catalog 4G.

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN-10857

Marking - Reciprocating machine equipped for slender tubular work

Source: ACROMARK COMPANY
7 Morrell St., Dept. IEN, Elizabeth, N. J.

Prevents breakage

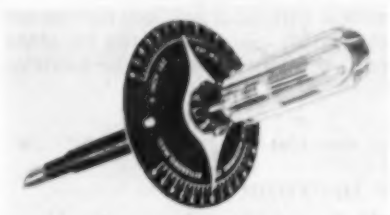
The company offers its standard Model 9A reciprocating marking machine with new tooling consisting of a ball bearing mandrel block and adjustable cradle roll. Work such as pencil bodies is supported and rotated correctly while marking is being impressed by the reciprocating action of the machine's die equipped head. Application can be made on plastic work pieces as well as on tubular metal parts.

The type, or die holder, can be employed in either a cold or a heated head. The holder will receive three lines of type set up so the marking can be applied lengthwise or crosswise on the work. A roll leaf feed also is available. The new tooling measures about 10 by 10 by 5 in. exclusive of the upper holder which fits into the marking head.

If you write maker identify as IEN-10858

Screw Driving - Hand tool reads torque in both turn directions

Source: APCO MOSSBERG CO.
100 Lamb St., Dept. IEN, Attleboro, Mass.



Sizes, prices on request

The shank of this new screw driver takes interchangeable bits and carries a dial scale reading on both sides of zero. The handle fits into the shank, connects to it through a torque element and carries a pointer that moves over the dial. Turning to either the right or left provides a torque reading in step with the turning resistance offered by a driven screw.

If you write maker identify as IEN-10859

Controls have been grouped for one-hand operation of the Transveyor truck manufactured by Automatic Transportation Co., 149 W. 87th St., Dept. IEN. Chicago 20, Ill. The new arrangement promotes safety and ease of operation. The operator can face in the direction the truck is moving. Travel control returns to neutral when the operator takes his hand away for any reason.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-10860

APCO *Packaged* CONDENSATION RETURN UNITS

for the SMALL LOW PRESSURE JOBS

10 to 40 lbs. with 8, 15, 30 Gallon Receivers

Packaged Duplex Condensation Return Unit with No. 4 Series Apco Pumps.

Start saving valuable heat units with APCO Square Tank Units. Built to meet demand for a smaller unit with the superb performance of our larger units. Remember, the Pumps are Apcos. No Vapor Binding — Special Provision for Expansion and Contraction — No Frictional Wear within pump. Thus, ECONOMY.

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DIVISION OF THE NEW YORK AIR BRAKE CO.
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TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants

How it works to —

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

All described in Folder A-510 IEN

Procedures also available for gages, gage inspection, kits, permanent loans, blue prints, etc. Readily adapted to unusual requirements.

Write for your copy today . . . specify procedures of particular interest

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PRODUCTION - INVENTORY - TOOLS - COSTS - MAINTENANCE

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Galt, Canada Watford, England

If you write maker identify as IEN-10862

go to a SPECIALIST for helical finned heat transfer tubing

- straight lengths
- compact coils for refrigeration condensers
- blast air heating coils
- blast air cooling coils

OVER 100 SIZES IN PRODUCTION

Made to your individual specifications!

ROME
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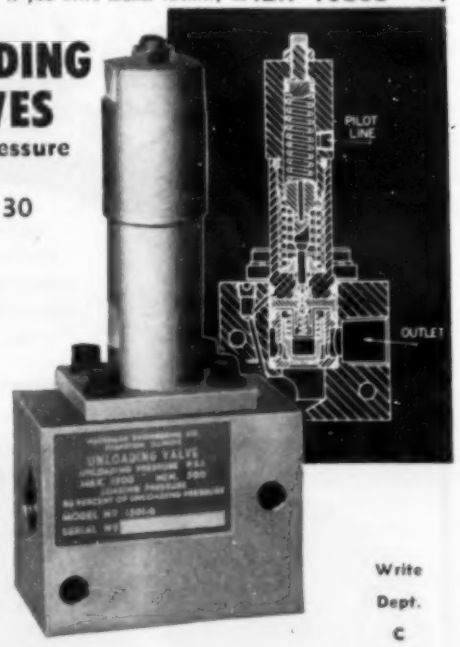
200 EAST FRONT STREET ROME, NEW YORK

If you write maker identify as IEN-10863

UNLOADING VALVES



For system pressure to 3000 psi

Flow rates to 30 G. P. M.

Waterman Unloading Valves are fast-acting, long-lived, easily adjustable. Maintain desired pressure settings without continuous readjustment.

Hardened and ground poppets and seats eliminate leakage.

Large internal passages assure maximum flow with a minimum pressure loss.

No external drain lines required.

Write Dept. C for Circular

Waterman Engineering Company

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If you write maker identify as IEN - 10864

IF

you want to cut production costs

THEN

without machining, you can:

- Accurately locate drill bushings,
- Center and secure shafts in Alnico rotors,
- Anchor spindles in abrasive wheels,
- Locate and secure fixture fittings in assembly frames,
- Anchor bearings in machinery.

Bulletin A1 **shows how Cerro Alloys can save time and money in above operations. Write for it today.**

CERRO DE PASCO CORPORATION

Dept. 6, 40 Wall Street • New York 5, N. Y.

If you write maker identify as IEN - 10865

THE TORRINGTON COMPANY
Specialties Division
900 Field Street, Torrington, Conn.

TORRINGTON SPECIAL METAL PARTS

Makers of Torrington Needle Bearings

If you write maker identify as IEN - 10867

Motor - Enclosed induction design for textile loom drive, ¾ to 2 hp.

Source: ELLIOTT COMPANY
Dept. IEN, Jeannette, Pa.

Bulletin PB 6000-5

Alucast rotor, designed for flywheel effect and equipped with air circulating fan blades, is mounted on a roller bearing at the shaft end and a ball bearing at the outer end of this new Elliott C-W loom motor. Stator core laminations are stacked under pressure, keyed to the frame and held in place with snap rings. Stator coils are vinyl insulated, impregnated and baked. Assembly is in a cast iron frame and cast iron end brackets, the latter with grease fittings for the bearings.

The motor is available in foot and flange mounting in frame sizes 224Y and 225Y. Rating is for 40-deg. C. temperature rise on continuous duty. The shaft is threaded, keyseated and tapered 1¼ in. per foot. It can be specified straight.

If you write maker identify as IEN - 10868

Stripping - Liquid material to remove chemically resistant finish

Source: DU BOIS COMPANY
1120 W. Front St., Dept. IEN, Cincinnati 3, Ohio

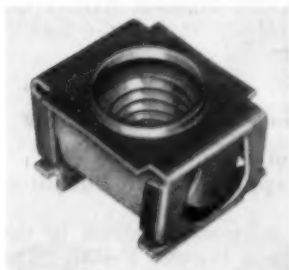
Technical data upon request

Strypp-Away is a new liquid to remove finishes such as the new Epon varnish. It is applied directly from its shipping container or can be diluted with water. It can be employed in temperatures to 220 deg. F. without loss of strength.

If you write maker identify as IEN - 10869

Fastening - Cage held nut is anchored in a panel by a hand tool

Source: TINNERMAN PRODUCTS INC.
Box 6688, Dept. IEN, Cleveland 1, Ohio



Snaps into place

Speed Grip trade names a new assembly of T-shaped steel nut and spring steel retaining cage to provide a threaded anchor in a metal panel. The assembly is slipped into a panel hole and anchor locked in position with the aid of a hand tool supplied for this purpose. It is not possible to rotate the nut or drive it out of its spring steel enclosure, after it has been installed, so there is no danger of losing it from its set position while the panel is being handled in production. The new nut can be attached after finishing processes have been completed.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 10870

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only **$36.00**

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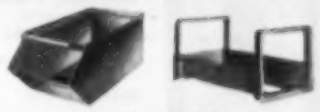
AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN - 10871

STOP excess handling of tools, parts, materials!

Stackbin® - Stackrack® Combinations are the ideal way to minimize parts, tools, materials handling. Stackbins are portable containers, so you can carry materials throughout your process without transferring contents to any other container. Stored in Stackracks, every Stackbin is instantly accessible when it's needed. You never disturb another bin. Hopper fronts on Stackbins provide visibility and accessibility to the materials. Available in 7 sizes, Stackbin-Stackrack Combinations make most efficient use of floor space. With inexpensive Adapters any small units can be stacked on larger units. Related items can be kept in one place. Individual units lock together: no tools, no setup time needed.



STACKBIN-STACKRACK COMBINATIONS

For full information write to **STACKBIN CORP., 1077 Main St., Pawtucket, R. I.**

Mfgd. and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

STACKBIN SYSTEM *"Stacked and Still Accessible"*

If you write maker identify as IEN - 10872

Here's why it pays to use LINK-BELT "RC" Flexible Couplings

Equalized load / Proper balance at high speeds / Effective compensation for end float and misalignment

Yes, two big engineering features—single chain simplicity and divided rollers—combine to assure top performance, economical power transmission. And that's why you get the three big operating advantages listed above with Link-Belt RC Flexible Couplings. Find out how you can use these efficient couplings to provide positive flexible shaft connection . . . from fractional to 1000 hp. Ask your nearest Link-Belt office or distributor, or write for Folder 2363.

LINK-BELT

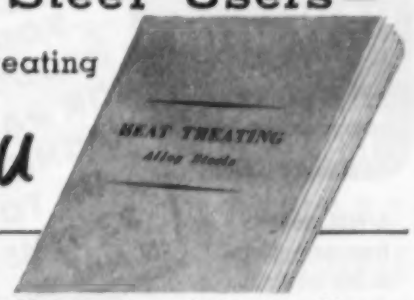
"RC" FLEXIBLE COUPLINGS 13.132

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

If you write maker identify as IEN - 10873

Alloy Steel Users—

this heat treating handbook is for *you*



Jam-packed with valuable information on heat treating, this new 55-page handbook has been specially prepared for those working with alloy steels.

It contains all salient data for normalizing, annealing, carburizing, flame hardening and other heat treating methods. Includes data and charts on critical points, nitriding depths, mechanical properties and other essential information. You'll find it invaluable for reference and well worth adding to your personal library. For a complimentary copy send your IENquiry today or write Frasse.

Frasse alloy steel stocks include:

Rounds	3140	4340
Hexagons	4130	8620
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Aircraft grades conform to Gov't "specs"

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, N. Y.

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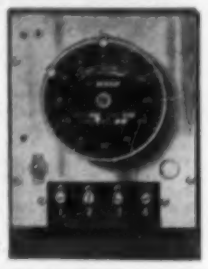
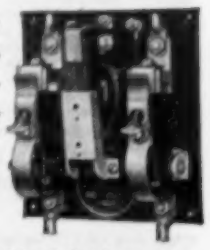
Performance . . .

Zenith means "highest point." This literally describes Zenith dependability, "on the dot," as shown by records of long trouble-free, maintenance-free service in widest range of control uses.

Zenith automatic controls



Cover the field: Magnetic Contactors, Remote Control, Reset, Interval and Process Timers, gearless, clutchless, Impulse Timers, Program Clocks—also special equipment for your special needs.



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See classified telephone directory for name of local distributor

ZENITH ELECTRIC CO.
146 West Walton Street Chicago 10, Illinois

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It's packed with ideas for product designers . . . a completely new edition of the booklet

"APPLICATION IDEAS"

by

GAST

showing actual practical O.E.M. applications like this . . .

For Gast rotary

AIR MOTORS
. . . 1/20 to 4 h.p.
. . . 100 to 6,000 r.p.m.

COMPRESSORS
. . . up to 30 p.s.i.
. . . ½ to 24 c.f.m.

VACUUM PUMPS
. . . up to 28 in.
. . . ½ to 24 c.f.m.

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Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO 4 H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN - 10876

NOW BETTER BIGGER SMALL PARTS INSPECTION

A 1001 products from pen points to fine fabrics, dies, casts and molds to intricate surface detail quickly inspected with the

'MICROCARD READER'

EASY TO CARRY— SET UP ANYWHERE

Here's the new, economical method of "pin point" accuracy in inspection of small parts and products. Control your quality by instantly magnifying the smallest part 23 times for accurate, detailed inspection. The Microcard Reader is the low cost way to higher quality for you. Write Today for Complete Information on "Inspection Applications" in Your Industry.

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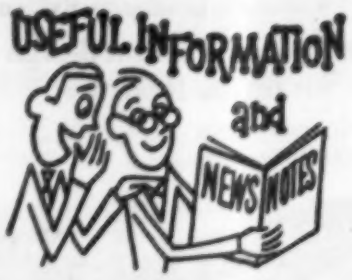


The following descriptions are published with the understanding that the material is available on request without charge. We do not forward inquiries for descriptions specifying letterhead request.

If you write maker identify as IEN - 10877

Aluminum—Association booklet gives new designations for wrought alloys

October 1 is the effective date for a new set of designations recently approved by the Association for wrought alloys. As an example, alloy 38 will be known as alloy 3003. The Association has prepared a new 8-page booklet, "Alloy Designation System", describing the new numbers and including an equivalent table. Aluminum Association, 420 Lexington Ave., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 10878

Aluminum—Wall chart shows new designations for wrought alloys

New four-digit designations on wrought aluminum and wrought aluminum alloys are tabulated in new 16½ by 11-inch wall chart ADWC-S, available on request. The chart folds to file size, opens to present tabulations of old and new designations. Kaiser Aluminum & Chemical Sales, Inc., 1924 Broadway, Dept. IEN, Oakland 12, Calif.

If you write maker identify as IEN - 10879

Castings—Frozen mercury process of making precision castings is detailed in booklet

Diagrams and pictures show steps in production of a precision casting in new 8-page booklet, "The Mercast Process". Metallic mercury is poured into a die for the initial step. Metal is poured into a ceramic mold for the final step. The booklet presents advantages of the process, shows typical parts produced in sizes to about 300 lb. and dimensions to about 42 inches. Mercast Corp., 295 Madison Ave., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 10880

Controls—Booklet on electronic controls tells about their application in buildings

Removing the mystery from electronic controls is the introductory section in new 24-page Booklet F-6437, "The Electronic Control Story". Control of temperature or humidity in a building is described, based on a bridge circuit, along with notes on function of sensing element and amplifier. Schematic diagrams illustrate types of control, from single-element to outdoor-reset hot water control. Barber-Colman Co., 1300 Rock St., Dept. IEN, Rockford, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10881

A PAID NEWS ADVERTISEMENT BY SEATING, INC.

CAFETERIA SEATING . . new table design permits quick storing in less space

Sico Tip-Top

Combination of table-and-bench service with folding action for storage ease is a feature of the Sico Tip-Top table designed for industrial use by **Seating, Inc.**, national manufacturers of seating equipment in Minneapolis, Minnesota.

Full mobility with casters and all-over plastic protection for the table top are additional features of the unit, which seats up to eight adults and incorporates a new functional design for one-leaf industrial tables. When not in use, the table top tips over to vertical position for storage in an area less than 12" wide. Unfolded, the table has a surface area of 15 square feet.

Frame construction is of 1" 14-gauge structural steel tubing, zinc lustron plated for lasting protection and beauty. Table requires no locks or catches to operate. Benches are made of 1-1/16" vertical grain fir with natural finish.

The Sico Tip-Top table is designed as both a work table and for use in employee lounges and cafeterias. Construction and materials suit it equally as well for outdoor use where required.

For literature and price information on the Tip-Top table, write **Seating, Inc., 6045 Pillsbury Ave., Minneapolis 19, Minnesota.**

If you write maker identify as IEN - 10882

Compared to Ordinary Braided Packings Users Report that

LATTICE BRAID*

has these **5** advantages

*Registered Trademark. ONLY Garlock makes Lattice Braid rod and shaft packings.

1. Lasts much longer than ordinary braided packings
2. Requires less gland pressure
3. Causes less sleeve and shaft wear
4. Retains lubrication longer
5. Does not unravel; thus makes better, more uniform rings

Get all the facts about Lattice Braid Packings. Contact your Garlock representative or write for new folder AD-131.

THE GARLOCK PACKING COMPANY
PALMYRA, NEW YORK

In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.
Branch Offices in Most Principal Cities

GARLOCK

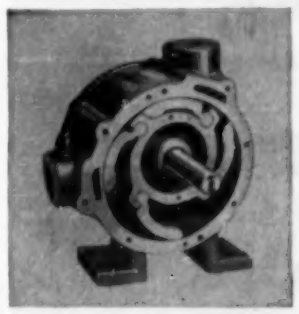
If you write maker identify as IEN - 10883

When it has to Run for Years and Years

WITHOUT FAILURE

MAKE IT A LEIMAN VACUUM AND PRESSURE PUMP

Leiman users say this:
"Almost continuous operation, 24 hours a day for 21 years"
"Using Leiman pumps on 350 machines. No pump has given a moment's trouble"



4-WING TYPE. Vacuums to 28"; pressures to 15 lbs.; displacement to 162 cfm. Wings take up their own wear, insure positive pressure or vacuum.

2-WING TYPE. Vacuums to 29.9"; pressures to 25 lbs.; displacement to 40.8 cfm. Automatic wing adjuster forces steel blades to meet cylinder wall, no sticking.

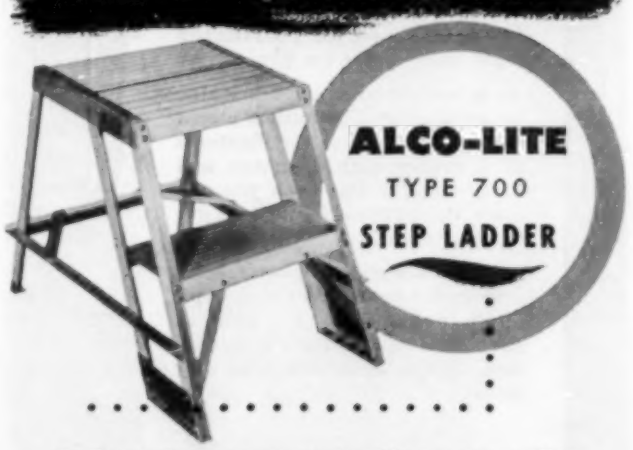
Write for 16-page catalog and blueprints of typical applications on Leiman rotary positive pumps—choice of industry since 1889.

SEE OUR CATALOG IN SWEETS FILE

LEIMAN BROS., INC.
166 Christie Street, Newark 5, N. J.

If you write maker identify as IEN - 10884

Easiest to handle . . . Safest to use!



In the stock room, store room, filing room or office, the clean-lined Type 700 ALCO-LITE Step Ladder provides safe, easy ascent and descent with its six-inch, non-slip steps. Sturdy extruded alloy aluminum construction, yet weighing only 11 lbs. Rubber feet prevent slipping, marring polished floors.

Write for specifications for this and other short step ladders.

MEMBER: METAL LADDERS ASSOCIATION

ALCO-LITE ALUMINUM LADDERS
ALUMINUM LADDER COMPANY
100 CARBIS STREET • WORTHINGTON, PENNA.

If you write maker identify as IEN - 10885

MOST TALKED ABOUT GUMMED TAPE DISPENSER ON THE MARKET!

Derby spent 2 years designing, building and testing the fabulous Super "152". It's a rugged, efficient, gummed tape dispenser with so many big machine features, so many unusual Derby exclusives, that its low price is truly sensational! Dispenses 1" to 3" width tapes in predetermined lengths up to 30".

See your dealer or write Dept. IF

DERBY SEALERS INC. Derby, Conn.

If you write maker identify as IEN - 10886

New WESTON (Model 980) Volt-Ohm-Milliammeter

RANGES:

D-C Volts: 1.6, 8, 40, 160, 400, 1600 (20,000 Ohms/Volt)
A-C Volts: 1.6, 8, 40, 160, 400, 1600 (1,000 Ohms/Volt)
DB Range: —15 db to +54 db (in six ranges)
D-C Milliamperes: 8, 80, 800
D-C Microamperes: 80
D-C Amperes: 8

OHMS RANGE	CENTER SCALE	FULL SCALE
R x 1	25	1,000
R x 10	250	10,000
R x 100	2,500	100,000
R x 1,000	25,000	1 megohm
R x 10,000	250,000	10 megohms

Accuracy 2% d-c, 3% a-c
Scale length 4.63"—size 6¼" x 7½" x 3¼"
Weight 2 lbs., 11 oz.

Complete literature on Model 980, and other WESTON test equipment available on request. WESTON Electrical Instrument Corporation, 614 Frelinghuysen Avenue, Newark 5, New Jersey 8104

At leading Distributors **WESTON** *Instruments*

USEFUL INFORMATION —*Continued*

If you write maker identify as IEN - 10888

Broaching—Booklet on the operation describes it from the standpoint of chips produced

"Chips Tell the Story" is new 12-page booklet that describes the broaching operation in non-technical manner, shows the various types of machines, adds a word about automation, and concludes a picture on the types of shapes produced by surface and internal broaching. Colonial Broach Co., Box 37, Dept. IEN, Detroit 12, Mich.

If you write maker identify as IEN - 10889

Electric Drives—Equipment for automation includes motors, controls, variable-speed drives

"Tools of Automation" is what the company calls its electric equipment to drive production machinery from a steel mill runout table to a continuous mining machine. Twelve-page Bulletin A-1555 shows the variety of motors, variable-speed drives, controls and regulators which it can supply together with examples of production machinery incorporating them. Reliance Electric and Engineering Co., 1088 Ivanhoe Road, Dept. IEN, Cleveland 10, Ohio.

If you write maker identify as IEN - 10890

*V-Belt Drives**—Seventy-six pages of data on multiple V-belt drives and their selection

New rating tables are a feature of "Multi-V Belt Engineering Handbook", covering speed ratings from 100 to 6,000 fpm. The booklet presents information on how to select multiple-V-belt drives, standard combinations, V-flat drives, quarter-turn drives. One section deals with installation. *Please use your letterhead in requesting the bulletin direct. B. F. Goodrich Co., 450 S. Main St., Dept. IEN, Akron 11, Ohio.

If you write maker identify as IEN - 10891

*Electronic Tubes**—How they are made is shown step by step in new picture book

Picture tour through the company's miniature-tube plant at Danvers is provided by new 44-page book, "Welcome to CBS-Hytron". *Please use your letterhead in requesting the book direct. Using 6AU6 miniature tube as an example, the book shows how it is made from button stem to final testing. Other pictures show steps in making TV picture tubes, transistors and crystal diodes at other plants. CBS-Hytron, 100 Endicott St., Dept. IEN, Danvers, Mass.

If you write maker identify as IEN - 10892

Fastenings—House publication issue on fastenings to minimize finishing problems

Thread-cutting screw that reams out holes clogged with porcelain enamel, asbestos washer to minimize crazing and cracking of a finish, a screw with flutes to drive in a paint-clogged tapped hole, are some of the fasteners presented in July issue of "Fastening Forum". There is an offer of test samples on these and other fastenings. Your name will be added to the list upon request. Shakeproof Div., Illinois Tool Works, 2501 N. Keeler Ave., Dept. IEN, Chicago 39, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10893

Process Instrumentation with MILTON ROY CONTROLLED VOLUME PUMPS

NEW BULLETIN 1253

Write for your copy, TODAY!

This New Bulletin describes completely the application of Controlled Volume Pumps to chemical feed and instrumentations systems.

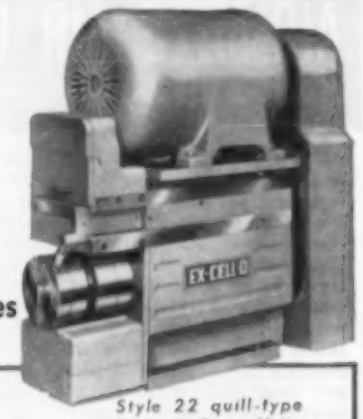
- describes many types of Controlled Volume Pumps with operation and selection data.
- details 25 flow diagrams of typical instrumentation systems.

MILTON Roy COMPANY
1302 E. MERMAID LANE
PHILA. 18, PA.

CONTROLLED VOLUME PUMPS ARE FLOW CONTROL INSTRUMENTS

If you write maker identify as IEN - 10894

New!
Ex-Cell-O Style 22 and 22-L Power Units Now give you 8" and 12" Strokes



Style 22 quill-type Hydraulic Power Unit.

For special purpose machines at low cost—

Use one or more of these Ex-Cell-O Quill-Type Hydraulic Power Units to feed, rotate, and retract tools for drilling, reaming, counterboring, and spot-facing. Drive single tools or multiple heads in flexible automatic cycles.

These self-contained, compact units can be placed close together in line or radially around a fixture. Five standard units are available. Ask your local Ex-Cell-O representative, or write Ex-Cell-O for literature.

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

XLO

54-46

If you write maker identify as IEN - 10895

new method of **process heating** and **cooling**

***saves 50%**

- * in initial cost
- * in heating and cooling time
- * in tank space
- * in maintenance labor

Each member of your buying committee should have this book which tells how Platecoils satisfactorily solve tank heating and cooling problems . . . and at the same time save time, money and manpower.

PLATECOIL REPLACES PIPE COILS

Write for your free copy of Bulletin P56 today!

TRANTER MANUFACTURING, INC. • LANSING, MICH.

If you write maker identify as IEN - 10896

For *Real* Economy

Do ALL Your Cleaning Jobs with ONE Cleaner

The IDEAL **STANDARD CLEANER**

The ALL-PURPOSE Combination Unit
1⅓ H.P. or ⅔ H.P.

A "tank-type" cleaner—VACUUMS lint, dirt, dust, scrap and *picks up water*. Has dust-tight bag and 12-gal. tank. Power unit also serves as blower, sprayer or "hand-type" vacuum cleaner. Attachments for every use.

A "TANK-TYPE"— A "HAND-TYPE"— AND A BLOWER . . . ALL IN ONE INSTANTLY CONVERTIBLE UNIT

TRY IT FREE!

Sold through Leading Distributors

IDEAL INDUSTRIES, Inc.
8 Park Avenue, Sycamore, Illinois
Please Send FREE IDEAL Standard Cleaners catalog data.
Name.....
Company.....
Address.....
City.....Zone....State.....

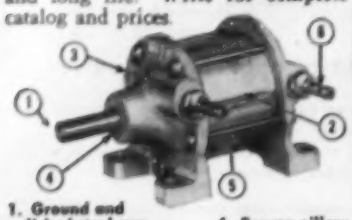
If you write maker identify as IEN - 10897

AIR-MITE AIR CYLINDERS

Low Cost . Compact . Powerful . Rugged

AIR-MITE Cylinders—made in single or double acting series—in 4 mounting types, are high quality cylinders at a low price. Simple, rugged design and compact construction give them long life, permit easy mounting on jigs, fixtures, tools, or machines. Used wherever power holding, pushing, pulling or lifting is required, AIR-MITE cylinders will meet your most exacting standards of dependability and long life. Write for complete catalog and prices.

4 Mounting Types



1. Ground and polished steel ram
2. Brass, true-bore cylinders
3. High strength aluminum alloy cylinder heads
4. Bronze oilless ram bushing
5. Five steel tie rods
6. Brass hose stems

AIR-MITE Devices, Inc.
4419 W. CARROLL AVENUE • CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 10898

MECHANIZE 4 Scrubbing Operations into 1

with a **COMBINATION SCRUBBER-VAC!**

This single unit, *Finnell's 213P* for large-area floors, *completely mechanizes scrubbing.* Applies the cleanser, scrubs, flushes, and picks up—*all in one operation!* No switches to set for *fast* or *slow. Self-propelled* . . . 26" brush spread. *Finnell* makes a full range of sizes . . . available on lease or purchase plan. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2610 East St., Elkhart, Ind.

● Cleans up to 8,750 sq. ft. per hour!

FINNELL SYSTEM, INC. *Originators of Power Scrubbing and Polishing Machines* — FINNELL — BRANCHES IN ALL PRINCIPAL CITIES

USEFUL INFORMATION —*Continued*

If you write maker identify as IEN - 10901

Vibration Isolating—New house paper on shock, vibration, noise isolation problems

Technical problems are reported in new house publication to assist in solving similar problems of your own. "Shock and Vibration Control Notes" in its first issue contains an article on shock mounts as means of increasing validity of shock tests, and a second article that warns not to expect too much from qualification shock tests. The quarterly publication will be sent to you on request. Barry Corp., 838 Pleasant St., Dept. IEN, Watertown 72, Mass.

If you write maker identify as IEN - 10902

Management—"Welcome" booklet tells about company's products and personnel

Visitors to the company's plant receive a new "welcome" booklet to acquaint them with major personnel, products and city facilities. The booklet is pocket size, has a memo pad in addition to a folding insert containing the information. There is an invitation to visit the plant should you be in the Columbus area. Denison Engineering Co., 1236 Dublin Road, Dept. IEN, Columbus 16, Ohio.

If you write maker identify as IEN - 10903

Conveying—New application examples in data sheets on overhead handling by monorail

Eight new data sheets are offered on request to suggest possible new uses for monorail equipment in overhead material handling. These bring to a total of 28 the reports available in the company's Case Study File F-2. The new ones are on such subjects as handling core sand, bedsheets in a hotel, sausage, coal and ash, order makeup. American MonoRail Co., 13111 Athens Ave., Dept. IEN, Cleveland 7, Ohio.

If you write maker identify as IEN - 10904

Pipe—Hand threading of stainless pipe is described as suggestions in new bulletin

Strong vise is the first recommendation made in Bulletin TDC-147, "Helpful Hints on Hand Threading of Stainless Steel Pipe and Tubing". The four-page bulletin, copyright 1952 but just released, continues with suggestions on die stock, dies, speeds, cutting oil, assembly, all based on the characteristics of stainless steel. Babcock & Wilcox Co., 4029 Fourth Ave., Dept. IEN, Beaver Falls, Pa.

If you write maker identify as IEN - 10905

Roofs—Booklet uses humorous cartoons to describe development of roofs from early times

"Roofing—Then and Now" titles new 20-page pocket-size condensed "history" of roofing. Drawings having more or less to do with the subject illustrate typical constructions such as clay tile, slate, marble, asbestos cement, built-up roofs. Advantages are listed for the company's glass fabric. Twinsburg-Miller Corp., Dept. IEN, Twinsburg, Ohio.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10906

CUSTOM MADE PRECISION STAMPINGS IN SMALL LOTS

Since 1921 we have specialized in the production of accurate die-cut metal stampings in small lots. The tool cost is low . . . actually as low as 15% to 20% of the cost of permanent tools. We guarantee dependable service and delivery on date specified.

● **SEND** us a sample or blueprint. We'll quote you a price. Or write for detailed information.

DAYTON ROGERS *Manufacturing Company*

Minneapolis 7D, Minnesota

If you write maker identify as IEN - 10907

Hotpack OVENS FOR INDUSTRY

Range—Room Temperature to 360° F. Temp. Dif. 5° F.

SPECIFY Hotpack

HIGH TEMP. BATHS for Tempering Metal Cleaning • ELECTRIC FURNACES • OVENS 12 to 250 cu. ft. • TEST ROOMS • STERILIZERS • STILLS

No. 620

HOTPACK gravity convected ovens provide a rapid flow of heat well suited for such purposes as chemical baking, stress relieving, core baking, instrument drying, and mold baking.

Big loading capacity—27 to 36 cubic feet.

Automatic thermoregulator gives close control of temperature over entire range of oven.

Comes equipped with four shelves, adjustable on 3" centers. Stainless steel interior, heavy gauge steel exterior.

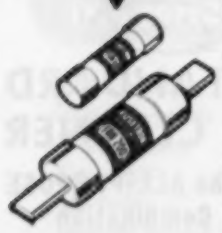
Model No.	Interior W	D	H	F.O.B. Phila.
620	30" x	20" x	72"	$525.00
622	36" x	24" x	72"	$725.00

Send for complete information

THE ELECTRIC Hotpack COMPANY, Inc.
5049 COTTMAN STREET, PHILADELPHIA 35, PA.

If you write maker identify as IEN - 10899

Proven on Loads *UNDER* 600 Amps. FUSETRON Dual-Element Fuses Have an Interrupting Rating in Excess of 100,000 Amps.



Recent tests verified by the Electrical Testing Laboratories of New York indicate that an interrupting rating of 100,000 amps. for FUSETRON fuses is a conservative one.

On the most severe available short circuit currents, FUSETRON fuses interrupted safely without igniting readily flamable material placed around the fuses . . . and there was comparatively little noise.

The time-lag characteristic of FUSETRON fuses has in no way been disturbed.

You get ALL THIS ADDED SAFETY without changing a panelboard or switch . . . PLUS the 10 Point Protection of FUSETRON dual-element FUSES — that permits you to load circuits to capacity; eliminates work stoppages caused by needless blows and reduces to a minimum the danger of damage to motors or equipment due to electrical faults.

Proven on Loads *ABOVE* 600 and up to 5,000 Amps. BUSS Hi-Cap Fuses Have an Interrupting Rating in Excess of 100,000 Amps.

BUSS Hi-Cap fuses give protection against dangerous overloads as well as high fault current — yet their high speed operation on heavy shorts limits currents to safe values. When coordinated properly with FUSETRON fuses they will not open ahead of the fuse nearest to the fault.

For Maximum Safety and Convenience — install FUSETRON dual-element Fuses and BUSS Hi-Cap Fuses throughout the entire electrical system . . . Once properly installed, no costly inspection time or down-time is required for calibration and other maintenance necessary on mechanically operated devices.

Blowing time charts and more information are available. Write for bulletin FIS and HCS.

FUSETRON — TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION — BUSS

BUSSMANN MFG. CO. (Division of McGraw Electric Co.) University at Jefferson, St. Louis 7, Mo.

If you write maker identify as IEN - 10908

The Shah of Tomora
And his pachyderm Laura
Strained all their muscles
And bust all their bustles
But couldn't budge that cardora.

Why use primitive methods to open balky, hard-to-roll boxcar doors? Why endanger lives and limbs? Why waste labor, time and money? THE NOLAN ONE-MAN CAR DOOR OPENER OPENS ANY BOX-CAR DOOR IN 20 SECONDS OR LESS!

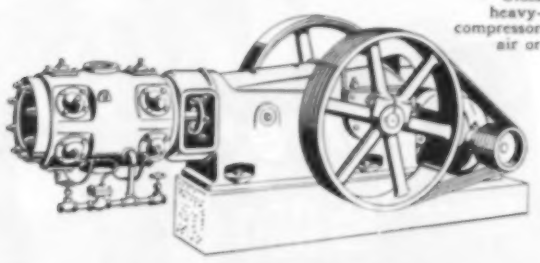
A few quick pulls on the anchor chain by one man and the door rolls open. The NOLAN saves its low initial cost in the first hour of operation.

NOLAN-ONE-MAN CAR DOOR OPENER $37.50 F.O.B. Bowerston

Order one or more now! Free literature

THE NOLAN COMPANY 114 Pennsylvania Street, Bowerston, Ohio

If you write maker identify as IEN-10909



Class ES, heavy-duty compressors for air or gas.

Dependable, low-cost AIR POWER for every industrial need

Also, a complete line of portable compressors

Ingersoll-Rand air compressors are known the world over for lasting dependability and economy of operation.

Whatever the job—if it calls for *air power,* we can meet your exact requirements, with substantial savings in time, effort and expense.

Ingersoll-Rand
11 Broadway, New York 4, N. Y. 708-1

CONDENSERS • CENTRIFUGAL PUMPS • DIESEL AND GAS ENGINES
COMPRESSORS • AIR AND ELECTRIC TOOLS • ROCK DRILLS • TURBO BLOWERS

If you write maker identify as IEN-10910

an ACCO product

Campbell Abrasive Cutter

Here's a versatile cutter

• This new CAMPBELL Model 28 SEVER-ALL Abrasive Cutter has the capacity for a wide variety of cutting operations. Ideal for quick cutting of all materials in metal-working and fabricating shops. Portability feature makes it especially suitable for construction work.

Important Features Include:

1. Work clamped on both sides of cut by hand-operated, self-centering work holders.
2. Can be supplied with foot-operated treadle.
3. Time of cut is approximately 3 seconds per square inch of material.
4. Cutting wheel completely enclosed during operation except for opening to clear work. All steel construction with full safety protection for operator.
5. Lowering of guard permits accurate location of work, permits long pieces to be placed in machine without threading through. Can be supplied with work stop.
6. Capacity—Solids up to 4" x 4" square; angles and channels to 8"; tubes and pipes to 4" O.D.; 4" angles and channels and 4" O.D. pipe at 45° angles, based on use of 18" cutting wheel and 10 H.P. motor.

***Write** today for specifications on the new SEVER-ALL or Bulletin DH-301 on the Campbell Abrasive Cutting Method*

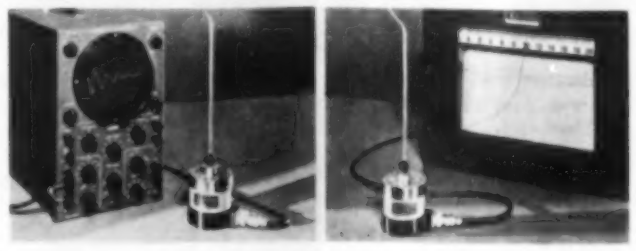
ACCO
Campbell Machine Division
AMERICAN CHAIN & CABLE
541 Connecticut Avenue, Bridgeport 2, Connecticut

Wet and Dry Cutters and Nibblers

If you write maker identify as IEN-10912

Transducer - Strain gage unit signals pulsation, surge, vibration

Source: TABER INSTRUMENT CORP.
111 N. Goundry, Dept. IEN, No. Tonawanda, N. Y.



Corrosion proof construction

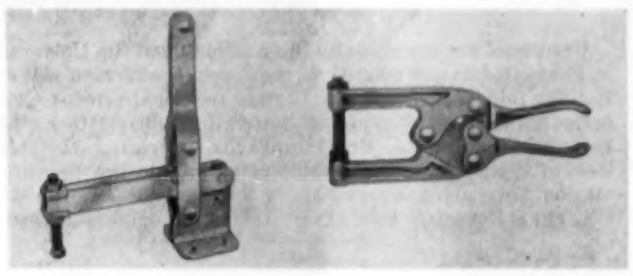
Process and operation variables, involving dynamic pressure, are measured by this new Teledyne transducer and are converted into electric signals proportional to pressure change. The signal applies at suitable potentiometer type instruments to indicate, record, control. The transducer is insensitive to transient vibration and so does not signal such events. It will withstand rough handling and also is insensitive to accelerations in two horizontal planes. Vertical acceleration sensitivity is under 0.3 per cent of full scale per G.

Pressure resulting for the operation of piston or rotary pumps, opening and closing valves applies inside the stainless steel housing on a thin stainless steel diaphragm. It actuates a light weight piston in contact with the electric sensing element. A precision metal ring in this element acts as the elastic member and carries four resistance strain gages bonded to it in a bridge circuit. Electrical unbalance as a result of distortion in the ring constitutes the indicating or control signal. Natural mechanical frequency is 2,000 cycles or more. Pressure is to 1,000 pounds.

If you write maker identify as IEN-10913

Clamp - Lever and plier designs, non-magnetic and corrosion resistant

Source: LAPEER MFG. COMPANY
Davison Road, Dept. IEN, Lapeer, Mich.



Specifications upon request

Model V-400, to the left in the illustration, is a new lever operated toggle clamp made of non-magnetic stainless steel. Model P-1200, to the right, is a toggle plier design employing forged non-magnetic Monel Metal. The lever assembly is fitted with a channel in which the spindle can be positioned at various distances from the base. The spindle itself provides adjustment for height and clamping force. This is to 400 lb. in the unit illustrated, with the spindle at the end of the channel. The plier design has a recommended clamping force of 1,200 pounds. Both designs are available in a range of sizes and types.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-10914

What can you do with ULTRASONIC MACHINING?

Ultrasonic Abrasive Machining, as developed by Raytheon, has already found wide application in such fields as sharpening tungsten carbide tools, chip breaker grinding, die shaping and finishing. It also provides a practical means of slicing, trepanning, forming or cutting shaped holes in tungsten carbide, ceramics, glass, quartz, and other hard or brittle materials. It may be just the process you need to solve a production problem.

LOOK INTO IT TODAY

Write for descriptive bulletin and information on the application of *Ultrasonic Machining* to your problem. Please specify material to be worked and describe operation.

Address Inquiries to Dept. 6120 IN

RAYTHEON
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 589 FIFTH AVENUE, NEW YORK CITY

If you write maker identify as IEN-10915

"JEEP" Model-230
2000 lb. capacity

Mercury

Send for catalog on complete line of MERCURY trucks, tractors, trailers.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted St., Chicago 9, Illinois

If you write maker identify as IEN-10916

If you write maker identify as IEN-10917

sharpen up a pencil ...and figure your savings

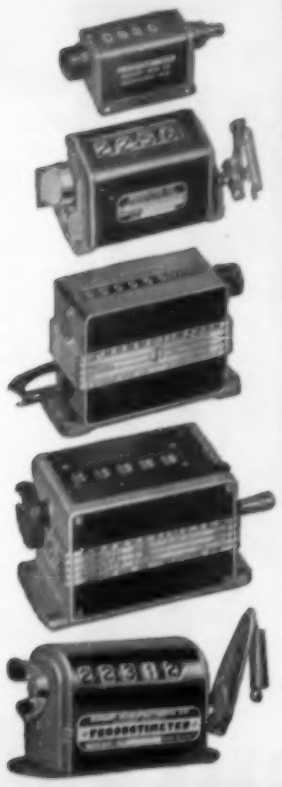
Costs for batch mixing and inter-plant handling are reduced in plant after plant when hard-to-clean containers are replaced by Hackney *Stainless Steel* Containers. That's because the Hackney advantages—swift and easy cleaning, seamless bottom head, protection against product contamination, long useful life—often result in a *lower cost per use*—when compared with present costs for other types of containers.

Available in standard sizes of 20, 30, 50 and 55 gallons. Or write for information on other sizes.

Hackney
Pressed Steel Tank Company
Manufacturer of Hackney Products
1449 South 66th Street, Milwaukee 14, Wisconsin
Downingtown Iron Works, Inc., Division
148 Wallace Ave., Downingtown, Pennsylvania

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as IEN-10918



COUNTING the pulse of INDUSTRY

Productimeters register accurate count of every unit processed . . . eliminate profit-eating losses . . . insure economical plant operation and maximum use of man-hours. There's a size and style to suit every need.

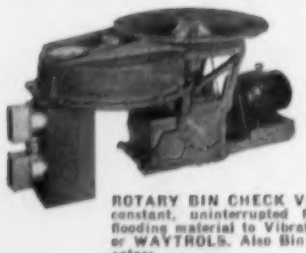
Send for Catalog No. 101

DURANT MANUFACTURING CO.
1930 N. Buffum Street
Milwaukee 1, Wis.
130 S. Water Street
Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS 75th ANNIVERSARY
Count Everything

If you write maker identify as IEN-10919

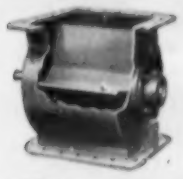
3 UNITS TO IMPROVE YOUR BULK HANDLING



Illustrations show 3 items from Jeffrey's broad line of bulk handling equipment. Jeffrey makes complete systems or individual units, all designed to give you greater production at less cost.

ROTARY BIN CHECK VALVE for a constant, uninterrupted flow of fine flooding material to Vibrating Feeders or WAYTROLS. Also Bin Level Indicators.

LOW-HEAD BARREL PACKERS for reducing size of containers, increasing capacity and cutting shipping costs. Also supplied with deck to provide conveying action in packing.



Rotary-Type FEEDER for finely pulverized material. Also other types of feeders.

Other Jeffrey Bulk Handling Equipment includes:
Constant Weight Feeders
Batch Weighing Systems
Batch Proportioning Systems
Electric Vibrating Feeders
Vibrating, Mixing Conveyors
Mechanical Vibrating Conveyors
Coolers and Dryers
Car Pullers
Power Scoops

Write for information on your specific requirement.

THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio

IF IT'S MINED, PROCESSED OR MOVED . . . IT'S A JOB FOR JEFFREY!

sales offices and distributors in principal cities

If you write maker identify as IEN-10920

FREE sample of the ultimate in labeling

Metal-Cal*

ANODIZED ALUMINUM FOIL

To keep your name or instructions before people—economically, attractively, permanently—Metal-Cals are the answer. Investigate today!

Metal-Cal
Manufactured by C & H Supply Co.
415 E. Beach Avenue, Inglewood 3, California
Please send me this free sample.
Name
Company
Address
City Zone State

*T.M. Reg. U.S. Pat. Off.

USEFUL INFORMATION—Concluded

If you write maker identify as IEN-10921

Shipping—By air through New York, 48-page book lists rates and information

August 1954 issue of "Guide to Air Shipping" covers regulations, facilities, practices, routings, services, charges, rates as well as advantages of shipping by air via the Port of New York. It has a documentary check list for export shipments. Port of New York Authority, 111 Eighth Ave., Dept. IEN, New York 11, N. Y.

If you write maker identify as IEN-10922

Testing—Technical article reprint tells how one company checks on its overload relays

Problems involved with overload relays, either from tripping or failure to trip, are described in new 4-page reprint bulletin, "Check Your Overload Relays". It is written by two engineers from Bakelite Company's Bound Brook plant, outline a three-point procedure of selecting the right heating element for a given relay, keeping the right heater where it should be, and testing overload relays in place. Multi-Amp Corp., 10 Third St., Dept. IEN, Newark 7, N. J.

If you write maker identify as IEN-10923

Lift Trucks—Safe operation is stressed by new bulletin on power lift trucks and drivers

Thirty-one rules are given in new 4-page reprint bulletin, "Send Your Cowboys to School", available on request. They deal with subjects such as starting, observing traffic rules, safe operation, operator training suggestions. Elwell-Parker Electric Co., 4205 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio.

If you write maker identify as IEN-10924

Lift Trucks—Time study information to assist in measuring performance of a fork truck

Results of a study made by the company and the University of Pennsylvania are offered on request in the form of a Work Kit file folder. It contains a 12-page technical reprint and a set of 22 data pages. Information includes basic fork-truck motions, descriptions, time standards, operating variables, how to apply allowances, examples on how to use the information. Several blank forms are in the kit. Yale & Towne Mfg. Co., 11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.

If you write maker identify as IEN-10925

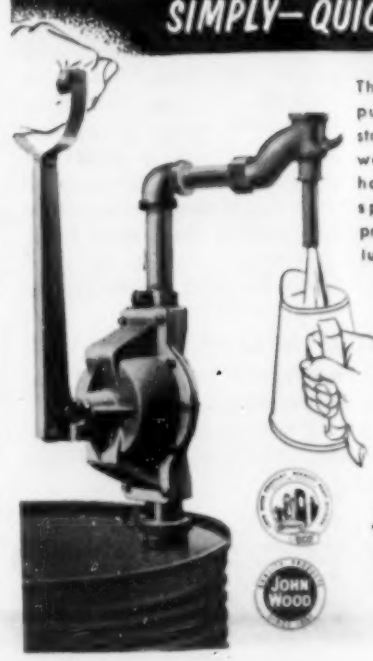
Wheels—Technical article reprint tells about rolling resistance of hand truck wheels

Relative performance of six basic types of hand truck wheels is described in 6-page reprint bulletin, "Rolling Resistance", available upon request. The bulletin describes what happens when a wheel rolls, compares action of resilient and hard wheels. You may be interested in results of a test based on 39 combinations of wheels, tires, axles and bearings. Hamilton Caster & Mfg. Co., 1700 Dixie Highway, Dept. IEN, Hamilton, Ohio.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-10926

THE BENNETT BIG "G" pumps liquids
SIMPLY—QUICKLY—CLEANLY



The double-action Big "G" pumps efficiently on both strokes of the handle—reduces waste, mess and hazard in handling liquids. Designed specially for petroleum products such as gasoline and lubricating oil, it also handles anti-freeze, turpentine, cutting oil and various solvents. Special models furnished with hose or spout allow transfer of many other industrial liquids. Let us know your liquid handling problems.

JOHN WOOD COMPANY
Bennett Pump Division
Muskegon, Michigan
Offices in Principal Cities

If you write maker identify as IEN-10927

Ramset FASTENING SYSTEM saves $15,000 per year for Glenn L. Martin Co.

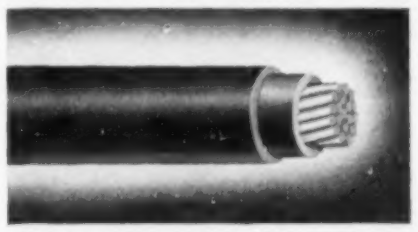
By using high-speed RAMSET SYSTEM for anchoring into steel or concrete, aircraft builders Glenn L. Martin Company slash maintenance costs at their Baltimore plant. They fasten steel rails, erect security fences, lay wood floors, install electrical services and make many day-by-day repairs. Not only do they reduce costs, but they finish the work 15 times as fast as by old-fashioned methods, to keep production rolling.

Ask your RAMSET dealer or write us for details on how you can make substantial savings in time and money, in new construction, maintenance or modernization with fast, easy, economical RAMSET SYSTEM.

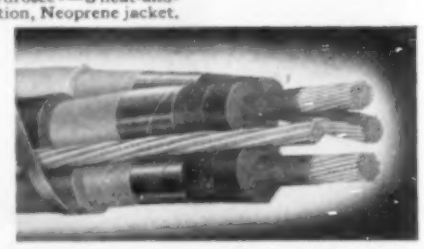
Ramset Fasteners, INC. RAMSET DIVISION OLIN INDUSTRIES INC.
12143 BEREA ROAD • CLEVELAND 11, OHIO
FIRST IN POWDER-ACTUATED FASTENING

If you write maker identify as IEN-10928

10 reasons why you should specify, buy, install U. S. GRIZZLY POWER CABLES



U. S. Grizzly® Power Cable, 600 volts—Type RR, single conductor, Hydrosec®—S heat-and-moisture-resistant insulation, Neoprene jacket.



U. S. Grizzly® Power Cable, 3,000 volts—Type RR, 3-conductor, Uskorona®—ozone-resistant insulation—shielded—Neoprene jacket.

1. Lighter in weight than lead-sheathed cable and lead-sheathed armored cables.
2. Greater flexibility.
3. Easier to handle during installation.
4. Easier to splice, tap and terminate.
5. More resistant to chemical corrosion.
6. Unaffected by stray currents.
7. Better protection against weathering.
8. Longer life.
9. Cost less.
10. Made by United States Rubber Company, the *only* electrical wire and cable producer to grow its own natural rubber, make its own synthetic rubber and manufacture its own plastics.

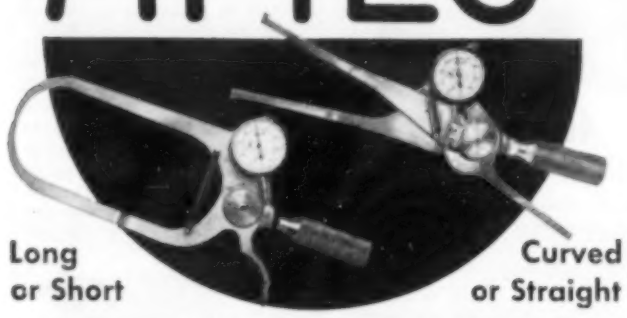
U. S. Grizzly Power Cables are used for general power distribution, and can be installed in conduits, underground ducts, buried directly in the ground, or installed aerially. Neoprene jacket protects against acids, alkalies, oils, and mechanical damage and weathering. (All IPCEA and NEMA specifications complied with.)

Write to address below for free catalog, U. S. Electrical Wires and Cables.

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department
Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN-10930

AMEs



Long or Short

Curved or Straight

CALIPER GAUGES—Custom-built to fit your exact need. Whether it's measuring the inside dimensions of a pipe, the wall thickness of a casting, the outside dimensions of a rocket—Ames can build the caliper gauge that fills your requirements.

Ames caliper gauges are made of carefully-finished heavy gauge steel and are equipped with an Ames exclusive: a chordal error correcting cam that assures accurate readings. Ames calipers are available with contacts of various shapes—ball, flat or pointed—made of carbide, hardened steel, or sapphire.

Write for your free copy of Ames catalog

Your measuring problems may involve a caliper gauge. If so, send it to Ames—for a quick, profitable solution.

Representatives in principal cities. B. C. AMES CO. *33 Ames Street Waltham 54, Mass.*

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN-10931

Now time your jobs AUTOMATICALLY with CALCULAGRAPH!

Save time and eliminate clerical errors with Calculagraph accurate-to-the-minute, printed job time records. Use these data cards for computing costs, estimating on reorders. One Calculagraph can record job time data for an entire shop or department.

NEW! AUTOMATIC DATER!

Standard on all electric models. Automatically changes date — eliminates incorrect dating of records.

ASK FOR COMPLETE INFORMATION, TODAY

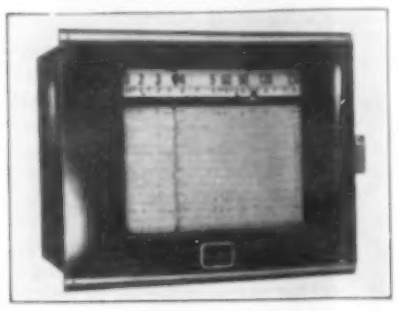
Illustrated literature and sample job cards will be sent promptly on request. Just call or write Dept. 300.

CALCULAGRAPH COMPANY
Sussex St., Harrison, New Jersey
STANDARD OF ACCURACY SINCE 1892

If you write maker identify as IEN-10933

Recording - Electronic instrument traces current and voltage on chart

Source: BRISTOL COMPANY
107 Bristol Road, Dept. IEN, Waterbury 20, Conn.



Parallel trace areas

New assembly, in the company's Dynamaster electronic potentiometer line, combines a thermal voltage converter and a thermal current converter with ac. to dc. transducers to measure and record voltage and current simultaneously on a strip chart. Accuracy is within 1 per cent. Sensitivity is within 0.05 per cent. Pen speed is maximum at 1.5 sec. for full scale travel.

Chart speed can be specified from ¾ in. per hr. to 4 in. per sec. and the speed can be changed in the field after the instrument has been put into service. High alarm contacts and retransmitting slide wires can be added without affecting accuracy or sensitivity.

If you write maker identify as IEN-10934

Building - Opaque plastic sheet for corrugated roofing and sidings

Source: RESOLITE CORPORATION
Route 19, Dept. IEN, Zelienople, Pa.

Unbreakable and corrosion proof

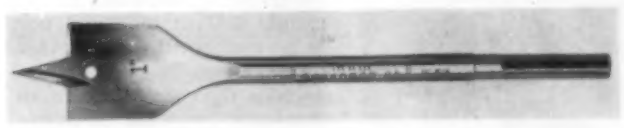
New opaque sheet, gray in color, has been added to the company's line of translucent plastic corrugated sheets for use in building construction. The plastic is a combination of polyester and Fiberglas. It is suited particularly for locations exposed to chemical and acid fumes that will attack other materials.

Standard length is to 12 feet. Overall width is 29 inches. Coverage width is 26½ inches. The corrugations are pitched on 5.3-in. centers and measure 1¾ in. in depth, all to match the translucent sheet previously described IEN-1078-54.

If you write maker identify as IEN-10935

Wood Working - Spade type bits for power drive, ⅜ to 1 in. sizes

Source: IRWIN AUGER BIT CO.
Dept. IEN, Wilmington, Ohio



Hang-up hole in head

Speedbor "88" trade names a new line of wood boring bits with shanks to fit three-jaw chucks on drilling machines and on ¼ to ½-in. electric tools. The shanks are hardened. Six bit sizes range from ⅜ to 1 inch. List price is 69 cents each, singly or in four or six-bit kits.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

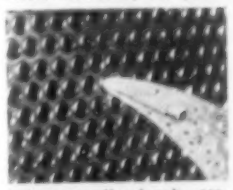
If you write maker identify as IEN-10936

Speed-up small tube cleaning with the NEW

ELLIOTT JIFFY GUN

The Jiffy Gun is a natural for cleaning sludge or soft deposit from small tubes as in condensers or heat exchangers. The job is easy and fast. Insert the nozzle into the tube end, push, and the released pressure shoots cleaning brushes or plugs through the tube. Air pressure can be used, but, water is recommended as the flushing action speeds the job. The long-lasting brushes of spirally wound nylon, cannot injure or stick in the tubes. Brushes and rubber composition plugs are available in required sizes. Contact your local Elliott representative or write Elliott Company, Springfield, Ohio

Insert brush or plug in tube end . . . shove Jiffy Gun nozzle into tube, and push.



Out comes the brush, preceded by sludge and water.

Y4-9

ELLIOTT Company

STEAM TURBINES • MOTORS • GENERATORS • DEAERATING HEATERS • EJECTORS • CONDENSERS • CENTRIFUGAL COMPRESSORS • TURBOCHARGERS • TUBE CLEANERS • STRAINERS

If you write maker identify as IEN-10937

THREE GREAT STRIPPING AIDS FOR PLATERS

Udylite offers these fine MacDermid immersion strippers for removing nickel and copper from steel, zinc die cast and brass base metals.

METEX STRIP AID

A water soluble powder, which when dissolved with sodium cyanide in a water solution, will strip nickel, brass and copper from ferrous metals by immersion.

METEX DB ACID ELECTROLYTIC STRIP

A strongly acid solution used for anodically stripping nickel and copper from zinc die castings or nickel from brass.

METEX NICKEL STRIPPER BR

Here is a water soluble powder designed to strip nickel from brass and copper alloys in an acid solution.

For technical data call your Udylite representative (see yellow pages) or write direct.

THE Udylite CORPORATION
DETROIT 11, MICHIGAN

WORLD'S LARGEST PLATING SUPPLIER

If you write maker identify as IEN-10938

Safety is no Accident!

It's engineered into **SAFWAY** maintenance towers

Only Master Welders work on SAFWAY Equipment

Interchangeable parts constructed by safe, strong, lifetime welding of high carbon steel tubing.

All SAFWAY Equipment Treated with Rust Inhibitor

Maintains accurate fit of parts and fasteners to assure safe, rigid maintenance towers.

Enamel is Baked on All Surfaces, Inside and Out

Improves appearance of equipment—helps insure lasting fit of parts and long, safe life.

All SAFWAY Equipment is Engineered to Last

With only routine care, Safway equipment will deliver a lifetime of safe, efficient service.

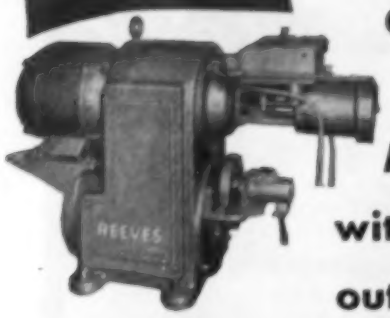
Write for Free Bulletin

RENTED and SOLD by distributors everywhere

SAFWAY STEEL PRODUCTS INCORPORATED
6228 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as IEN - 10940

NEW!



REEVES Automatic Controls! ...including Auto-Pneumatic with linear output speeds!

● *For automatically controlling liquid levels in tanks, maintaining constant temperatures, pressure, and other variables, and monitoring flow systems of liquids, gases or chemicals.*

REEVES new Auto-Pneumatic control with linear output speeds is but one of a complete line of controls designed and engineered to operate your machines more efficiently, more profitably, *automatically.* Send today for your copy of REEVES new Automatic Production Control Booklet. Specify IN2e-G.

FREE!
Reeves New Automatic Production Control Booklet

REEVES PULLEY COMPANY • COLUMBUS, IND.

If you write maker identify as IEN - 10941

500 MORE EMPLOYEES

...yet paper towel costs go down

The Pennsylvania plant of one of America's well-known companies* finds Mosinee Sentinel Towel Service is still saving them $300.00 per month, compared with previous towel service. This tremendous saving exists in spite of the fact that (1) number of employees has increased by 500, and (2) plant has increased its work week from 5 to 7 days.

**Name on request*

BAY WEST PAPER CO.
1088 West Mason Street
GREEN BAY, WISCONSIN
A Division of Mosinee Paper Mills Co.

MOSINEE *Sulphate Towels*

PREP-TOWLS • ZIP-TOWLS • TRIM-TOWLS • TURN-TOWLS • ROLTOWLS

If you write maker identify as IEN - 10942

If you have a labeling problem ordinary labels can't solve...use

AVERY Kum-Kleen self-adhesive LABELS

...the tough ones are our specialty

...where other types of labels are found "wanting"...or when you need to substitute an attractive pressure-sensitive label for a costly nameplate... Avery Kum-Kleen labels are the *best* solution to your problem!

...and so are the other kind..

...where you want *faster* labeling... improved appearance...labels that won't pop, curl or peel...or those the housewife can remove without soaking or scraping...there's no substitute for an Avery Kum-Kleen label!

faster • easier • more economical

Patented Avery dispensers...manual or electric... feed die-cut *pressure-sensitive* labels off roller tape, ready to be LAID ON any clean, smooth surface. No moistening...no sticky fingers.
Where can YOU use these labels in YOUR business? Write today for free samples, case histories and prices.

AVERY ADHESIVE LABEL CORP., DIV. 103
117 Liberty Street, New York 6 • 608 South Dearborn Street, Chicago 5
1616 So. California Ave., Monrovia, Cal. • Offices in Other Principal Cities
Originators of Pressure-Sensitive Labels

If you write maker identify as IEN - 10943

Gage - Self-centering dial unit checks bore for size, roundness, taper

Source: GEORGE SCHERR COMPANY
200 Lafayette St., Dept. IEN, New York 12, N. Y.

Bulletin Gage 844

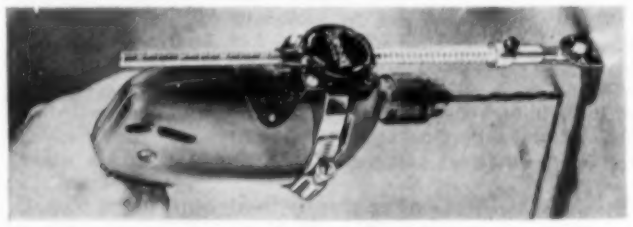
Seven standard sets of this new No. 844 bore gage cover a measuring range from 0.200 to 4.000 inches. Each is packaged in a black hardwood case. The "bridge" end of the gage forms a triangle with the feeler point to provide self-centering action. Movement of the contact points is transmitted to the indicator by stilts pointed at both ends and resting in bearings.

The gage is set to a master ring gage or to a stack of gage blocks secured in a holder between caliper jaws. A thumb screw on the indicator resets to zero. Measuring surfaces are hardened and ground cast steel. Carbide tips can be specified.

If you write maker identify as IEN - 10944

Drilling - Portable tool attachment to "square" a drill with the work

Source: HIGH STANDARD MFG. CORP.
Dept. IEN, Hamden, Conn.



About $7, to fit any drill

Guid-O-Dril is a new portable drill attachment consisting of a body, metal strap clamp and spring backed graduated rod or finger terminating in an angle graduated contact head. The unit clamps on a portable drill as shown in the illustration. It can be set to drill square or at an angle and acts as a visual guide and depth gage for the operator.

If you write maker identify as IEN - 10945

Opposed arrangement of two upright drilling machines, one in normal position, the other upside down, is employed to machine the center hole in an aluminum washing machine agitator. The bottom drill reams the bearing. The top one flycuts the top of the agitator to correct height. Rockwell Mfg. Co., 624 N. Lexington Ave., Dept. IEN, Pittsburgh 21, Pa. is the drill manufacturer.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10946

Free! New!

SIGNODE GUIDE TO BETTER PACKAGING and SHIPPING METHODS

Learn how to give your products better protection in transit, at lower costs. Send for this new, 1954 revised edition of the *Signode Guide to Better Packaging and Shipping Methods.* It is filled with usable facts—sizes and weights of steel strapping, tools, accessories, and a complete new line of seals and sealers; methods of applying strapping to containers, and to loads in open and closed cars; tested ways to barricade car doorways to protect all types of packaged and bulk commodities; and the use of automatic power strapping machines.

Send for your 1954 copy today!

To get your free copy of the *Signode Guide To Better Packaging and Shipping Methods,* mail this magazine's reply form, or write . . . . .

SIGNODE STEEL STRAPPING COMPANY
2611 N. Western Avenue, Chicago 47, Illinois

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 10947

40 PAGES of helpful information

on Recovering Dusts, Fly Ash, Mists, Fumes and other Suspensions from Stack Gases

Latest data from Western Precipitation on Cottrell Recovery Equipment!

Do you have operations in your plant where gas-laden suspensions, wet or dry, are a problem? Such suspensions may be falling on surrounding property, causing nuisance difficulties. Or perhaps important values are being lost that can be profitably recovered.

Whatever the nature of your recovery requirements, you will find this 40 page Cottrell booklet of great help. It contains up-to-date data on the latest advancements in Cottrell recovery methods — prepared by the organization that pioneered commercial application of Cottrell Electrical Precipitators almost a half century ago and has consistently led in new Cottrell developments.

This booklet summarizes such important data as . . .
- Basic types of Cottrell equipment.
- Various types of Collecting Electrodes.
- Various Shell Constructions.
- Data on CMP Units.

. . . and many other helpful facts.

This data-packed booklet is free. Ask for Bulletin C103R.

WESTERN Precipitation CORPORATION
DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS
Main Offices: 1511 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2
1409 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 10948

IT'S EASY TO MAKE

Repairs

LIKE THESE...

Just mix and fix—it's easy with Smooth-On No. 1 Iron Cement. You can seal cracks in pipes, boilers, metal containers . . . tighten loose screws and fixtures in wood, metal or tile . . . anchor bolts in concrete. Smooth-On expands as it sets and hardens like iron. Makes a tight, lasting repair that virtually becomes a part of what it fixes. Keep a can on hand (Smooth-On doesn't deteriorate) and use it as you need it—at a cost of only a few pennies per repair.

FREE REPAIR HANDBOOK

New, completely revised, 48-page illustrated handbook has hundreds of time and money saving repair tips for jobs in the plant and around the home. Millions of these repair handbooks have been distributed during our 58-year history. Write for your copy today.

BO 401

SMOOTH-ON MANUFACTURING CO., DEPT. 1
570 COMMUNIPAW AVE., JERSEY CITY 4, N. J., U. S. A.

SMOOTH-ON

THE IRON CEMENT OF MANY USES

If you write maker identify as IEN - 10950

HOW TO HANDLE DRUM FLUIDS faster!

WORKS DOZENS OF WAYS!

Handiest piece of equipment in the plant! That's what they say at scores of plants where this Fast-Flo Drum Pump is used. It's a really versatile worker . . . has dozens of specific uses. Here are just a few ways it will work for you:

- **For transferring fluids cleanly and safely from upright original drums.**
- **For supplying or adding fluids to production lines, direct from original drums.**
- **For agitation and mixing in closed drums.**
- **For injecting fluids such as cutting oil at high pressure.**
- **For intermittent spraying of lacquers, varnishes and other light coatings.**

Fast-Flo is surprisingly low in cost . . . air-operated . . . easy to handle . . . and *rugged!* You get double-action, high volume, controlled delivery, wherever you use it.

Write today for the new Fast-Flo Idea Book which tells you where and how this pump can save you money.

GRAY COMPANY, INC.
101 Grace Square, Minneapolis 13, Minn.

GRACO *Fast-Flo* **DRUM PUMP**

Regional Offices: New York, Philadelphia, Detroit, Atlanta, Chicago, San Francisco

If you write maker identify as IEN - 10951

ALEMITE OIL-MIST

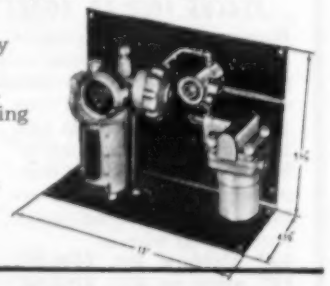
Saved $2400 first year

. . . extended bearing life from 20 weeks to one year and four months

Eastern Manufacturer Breaks Bottleneck, Cuts Downtime, Ups Production!

Bearing temperatures were running 200° on an important blower. Production losses totaled $1000 with each frequent bearing failure. After careful study of the problem, management installed an Alemite Oil-Mist unit costing little more than $100. Result: No bearing failures; downtime eliminated! $2400 *saved* to date!

Alemite Oil-Mist is a fully automatic system which atomizes oil into mist . . . distributes it through tubing to bearings . . . applies a constant uniform oil film to groups of bearings designed either for oil or grease lubrication.



delivers oil to bearings 3 ways

1. Oil-Mist as Such. For any type of anti-friction bearing—ball, roller or needle.

2. Oil in Spray Form. For open and enclosed gears and chains. Nozzle partially condenses mist so that it can be directed onto a concentrated area.

3. Oil-Mist Condensed. For plain bearings, slides, ways, vees, cams and rollers. In these applications, condensing fittings convert oil mist to liquid oil.

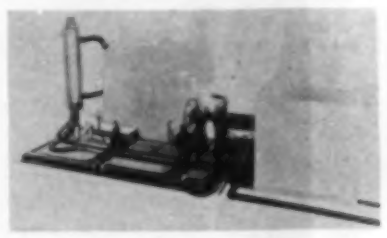
Get the facts NOW!

Let us send you the complete story on Oil-Mist. Specifications, models, typical applications, actual case histories. Get yours now. Write Alemite Division of Stewart-Warner, Dept. K-104, 1850 Diversey Parkway, Chicago 14, Illinois.

If you write maker identify as IEN - 10953

Testing - Mounting stand and adapters for gasoline engine run-in

Source: CLAYTON MFG. COMPANY
Box 550, Dept. IEN, El Monte, Calif.



Quickly adaptable

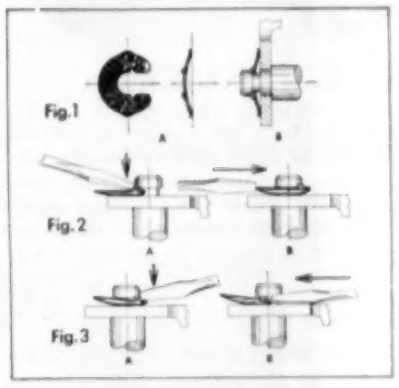
An engine or an assembled internal combustion power unit can be set up quickly for run-in test with this new stand and the adapters supplied to apply with it. A cooling column takes the place of the engine's radiator, can be removed when a power unit including a radiator is to be put on test. Three sizes of stand and equipment take engines rating to 200, 600 and 1,200 hp.

The stand is made up of reinforced steel side rails with slotted and drilled cross rails that provide support for the front and rear engine mounts. A drip pan with a drain connection aids in removal of oil and water spillage. The engine mounts, front and rear, are designed to take and release an engine quickly and to align it for connection to a dynamometer. Flywheel adapter plates bolt to the flywheel and connect to the dynamometer through a master hub and double universal drive shaft. A self-contained electrical unit provides for engine starting and ignition. A hydraulic throttle control is operated at the dynamometer control panel. A drive shaft guard and signaling equipment to warn against oil pressure failure or excessive water temperature can be specified.

If you write maker identify as IEN - 10954

Fastening - Steel retaining ring locks in shaft groove, takes end thrust

Source: WALDES KOHINOOR INC.
47-16 Austel Pl, Dept. IEN, Long Island City 1, N. Y.



Patents are pending

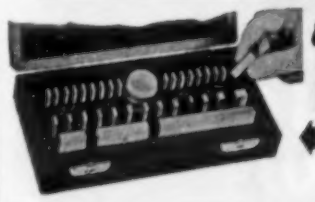
Truarc Series 5139 is a new spring steel retaining ring shaped like a bowed horseshoe and equipped with two locking prongs. It assembles radially and can be seated in a deep groove to take a thrust load. Shear strength ranges from 500 lb. for the smallest ⅛-in. ring to 2,500 lb. for the presently largest ½-in. size. Sizes refer to nominal shaft diameter on which application is made. Groove diameter is somewhat less.

The ring is placed next to the shaft and is compressed until the locking prongs enter the groove machined in the shaft to receive it. The ring is then pushed forward in the groove until the prongs pass the outer diameter of the shaft. There the ring springs back to its normal bowed shape and the prongs lock around the shaft. The ring can be removed with a screw driver by reversing the mounting procedure. No skill is required.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10955

ULTRA-CHEX GAGE BLOCKS *for Every Need!*



Supplied in one Superior Accuracy

5 MILLIONTHS ± ACCURACY

34 BLOCK SET.....$125.00 (Shown) Code GADHI — Incl. Opt. Parallel

82 BLOCK SET.....$275.00 Code GHEYS — In Case

9 BLOCK SET FOR INDIVIDUAL MECHANIC $22.50 Opt. Parallel $5.00 Extra Code GADPO

These Sets will supply the needs of any discriminating shop that must work to gage-block precision.

IMMEDIATE DELIVERY

Write for Illustrated Folder—Code GINVU

"Lustro-Chrome" MICROMETER

Take the GLARE out of Micrometer Reading with the New "Lustro-Chrome" MICROMETER

MEASURE TO 1/10,000th

No. 901 C 0-1" Size with LOCK NUT and RATCHET and 10th Vernier as shown ..... $13.25 Code GHAEF

This tool with TUNGSTEN CARBIDE tipped anvils ..... $15.75 Code GHAEF-CA

Drop-forged model with chrome finished micrometer head from $8.25 up.

All graduations are well-defined black lines on dull chrome surface for easier and surer reading, even in poor light. Guaranteed accurate within one half of a ten thousandth of an inch.

Ask for Micrometer Catalog—Code GINWY

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN - 10956

Eyes DUSTY, DRY?

YOU NEED . . .

FOG-PROOF, GAS-TIGHT GOGGLES

. . . for paint spray, gases, dusts, fumes, smoke. They hug your face so securely that hazardous outside elements cannot reach your eyes. Fog is removed from lenses by an easy nod or shake of the head. The few drops of water placed on the inner wall of the lens do the trick. Yes, they can be worn with any respirator. Sample, $2.00 postpaid.

H. S. COVER, SOUTH BEND, IND.
"Respirators for Industry since 1894"

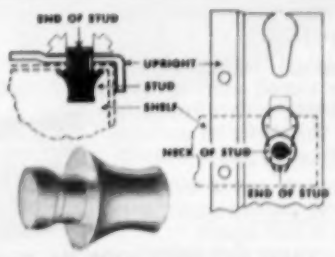
If you write maker identify as IEN - 10957

SHELVING EXCLUSIVE* gives Equipto Units 3 big advantages

1 **60% FASTER ASSEMBLY.** No fumbling with nuts, bolts, and tools. Fewer Parts.

2 **QUICKER SHELF ADJUSTMENT.** Can be instantly shifted without moving adjacent units . . . adjusts on 1½" centers.

3 **GREATER SHELF CAPACITY.** Each shelf will carry 600 lbs. without permanent deflection . . . 2000 lbs. when reinforced.



*IRON-GRIP SHELF ASSEMBLY (Right Diagram)—FRONT VIEW showing how stud tightens against shelf in sloping keyhole as more weight is applied to shelf.

(Left Diagram) — BOTTOM VIEW CROSS SECTION shows taper on stud which combines with slope in keyhole to form tightest and strongest of grips.

Send for complete 32 page free catalog.

Equipto
Division of Aurora Equipment Co.
655 Prairie Ave., Aurora, Illinois
Steel Shelving . . Parts Bins . . Drawer Units

If you write maker identify as IEN - 10958

HIGHER SPEEDS! FASTER GRINDING!

kipp AIR GRINDERS

MODEL JA
50,000 R.P.M.
$42.00 IN U.S.A.

Weight 12 ounces; length 6¾ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

The RPM's stay up while grinding . . . not only when the grinder runs idle. That means better work—longer wheel life.

High speed grinding with small wheels was a Madison-Kipp development of the late twenties. It was born out of a pressing need in our tool room. Because tool room grinding problems are universal, we believe it will pay you to utilize Kipp grinders in your tool room as generally as we do in our own.

kipp

MADISON-KIPP CORPORATION
224 Waubesa St. • Madison 10, Wis., U.S.A.

If you write maker identify as **IEN - 10959**

It's A
NEW ADDITION
TO THE
DICO WHEEL FAMILY

DEMOUNTABLE HUB WHEELS

For Trailers • Farm Equipment • Industrial Use

4.00 x 8
(16.25" outside rubber diameter)

(5) Bolt Hub with 4½", 4¾" and 5" bolt circles. The hub in this wheel will take various automotive type wheels having the above bolt circle requirements.

WIDE BASE

5.00 x 8 (16.4" outside rubber diam.) — **5.50 x 8** (18.36" outside rubber diam.)

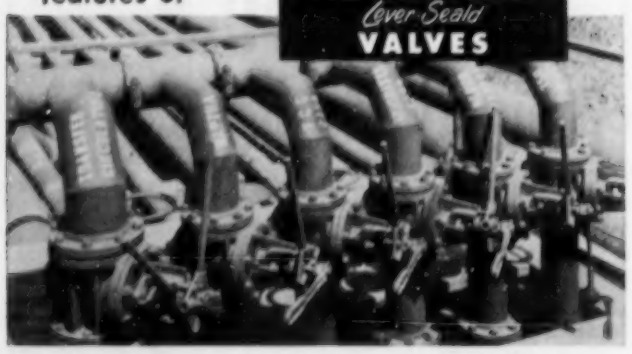
(5) Bolt Hub—4½" bolt circle. 4¼" wide base rims accommodate tires with greater air volume and heavier load capacity. Less air inflation gives greater shock absorption, assuring smoother, cushioned riding. Get all details NOW on the new DICO Demountable Hub Wheels.

DICO WRITE FOR NEW DICO WHEEL CATALOG
DES MOINES 5, IOWA

If you write maker identify as **IEN - 10960**

★ positive, DROP-TIGHT shut-off
★ instant STICK-PROOF operation

built-in features of **HOMESTEAD Lever-Seald VALVES**



Wherever you have corrosive, erosive, viscous, or volatile hard-to-hold fluids, those are the jobs on which you want to use Homestead Lever-Seald Valves. The powerful lever and screw device built into each valve, firmly seats the valve or relieves seating pressure just enough to overcome friction and allow the plug to turn easily.

That's why Lever-Seald Homestead Plug Valves cannot stick or seize; and also why they afford positive shut-off under all conditions. Protection of all vital operating parts and sealing surfaces from corrosive or erosive effects of line fluids is further guarantee of their long service life and extremely low maintenance.

Homestead Lever-Seald Valves are cast in semi-steel, steel, stainless, bronze, or other specified metals; sizes 1½" to 12" for pressures up to 1500 pounds.

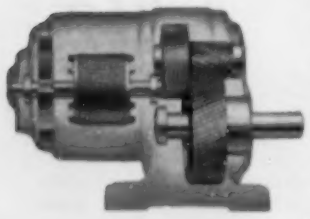
Send for details and copy of VALVE REFERENCE BOOK No. 39-3.

HOMESTEAD VALVE MANUFACTURING COMPANY
P. O. Box 85 — *"Serving Since 1892"* — Coraopolis, Pa.

If you write maker identify as **IEN - 10961**

PLANT RECORD PROVES SLO-SPEEDS SUPERIOR

Our first experience with a few Slo-Speed geared motors on narrow fabric looms was so successful that there is now a preponderance of Slo-Speed motors in our mill, writes A. H. Geilenberg of J. M. Geilenberg & Son, Inc., Marlboro, N. H. We eliminated oil leaks found in other equipment . . . we required less installation space . . . and severe loom vibration has not affected performance of your Slo-Speeds.



STERLING SLO-SPEED OUTSTANDING FEATURES:

Simplified gear system—balanced design—compact—rugged — highly efficient — abundant lubrication—low output shaft—positive oil seals — Herringbone Rotor — protected — streamlined — direct through ventilation — quiet operation — AGMA speeds — extremely long life — every unit will operate in any position.

20-page illustrated catalog... Sterling Speed-Trol, Slo-Speed, Klosd and Klosd-Tite Electric Power Drives. Write for catalog No. C-422.

STERLING ELECTRIC MOTORS

Plants: New York City 51; Chicago 35; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

If you write maker identify as **IEN - 10962**

Testing - Vibrating machine rates force output to 12,500 pounds

Source: MB MFG. COMPANY
1060 State St., Dept. IEN, New Haven 11, Conn.

5 to 2,000 cps.

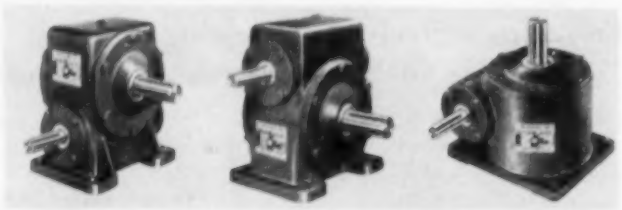
Capacity has been "upped" by 2,500 lb. in this new design of the electric vibrating equipment previously described IEN-6734-53. New rating is now 12,500 pounds. Castings have been strengthened. A new cooling circuit has been employed. Air is forced through ducts to the coils to permit continuous operation at maximum rating.

The table can be rotated for horizontal drive by means of a gear transmission in the trunnion mounting. Vibration isolators in the trunnions eliminate need for special floor construction. A control panel and a rotating power supply are part of the standard equipment.

If you write maker identify as **IEN - 10963**

Drive - Worm gear reducers, 0.01 to 5 hp., 5 to 60 to 1 ratios

Source: WINSMITH INCORPORATED
Dept. IEN, Springville, N. Y.



Dimensions, specifications in Bulletin HW654

Types CB, CT and CY, shown from left to right in the illustration, are three new worm gear speed reducer designs, each presently available in five sizes of a projected thirteen. Each new assembly is equipped with gears, bearings and shafts rated for AGMA Class 1 Service. The housings are reinforced one-piece construction with surface area for ample heat radiating capacity.

If you write maker identify as **IEN - 10964**

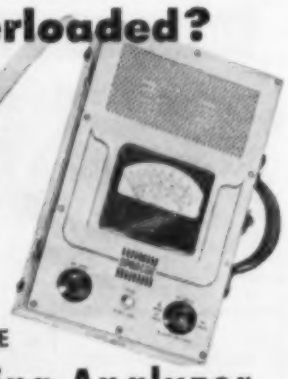
Cradle arms are available for the fork lift trucks built by Elwell-Parker Electric Co., 4205 St Clair Ave., Dept. IEN, Cleveland 3, Ohio, to stack roll type loads on their sides and to pick individual rolls up from a stack. Capacity is to specification for the new unit.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10965**

Wiring Overloaded?

CHECK IT!



...WITH THE SPRAGUE

Adequate Wiring Analyzer

This compact Sprague instrument checks wiring to see if it's adequate for present or contemplated loads.

See the effect of increasing loads on wiring *right at the spot!* Direct reading meter indicates percentage voltage drop on 115 or 230 volt circuits under load *without troublesome calculations.*

Connectors for convenience outlets, equipment, panel boards, etc. are furnished—ideal for industrial, utility, and field use.

Write for Bulletin PF-600

SPRAGUE ELECTRIC COMPANY
165 Marshall Street, North Adams, Massachusetts

SPRAGUE
PIONEERS IN ELECTRIC and ELECTRONIC DEVELOPMENT

If you write maker identify as **IEN - 10966**

A BETTER CLOSURE for SMALL PAPER BAGS

UNION SPECIAL'S Style 60000 D bag closing machine, producing the exclusive Dubl-Tape closure, is designed to speed packaging . . . cut costs . . . and improve appearance.

- **FAST—Speed to match output of standard filling and weighing equipment.**
- **NEAT—Produces an eye-pleasing, sales-stimulating package with high merchandising value.**
- **ECONOMICAL—Operating cost per bag is at a minimum . . . uses inexpensive cotton thread and paper tape.**
- **VERSATILE—Adjustable for a wide range of bag sizes, short or long runs.**

Write for BULLETIN No. 100 to get the complete facts on this machine . . . and how it can do a better closing job for you.

UNION SPECIAL Dubl-Tape CLOSURE

Union Special MACHINE COMPANY
410 N. Franklin Street • Chicago 10, Illinois

If you write maker identify as **IEN - 10967**

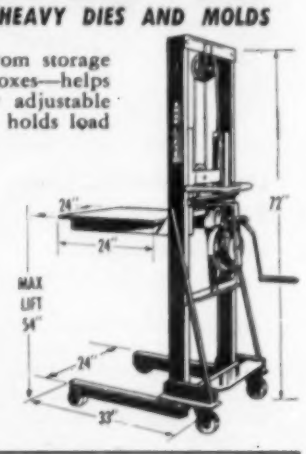
ECONOMY LIFTERS

Sturdy Structural Steel Frame Engineered for Extra Stability and Strength

SHOPLIFTER

LIFTS-MOVES-SEPARATES HEAVY DIES AND MOLDS

Safely handles heavy dies from storage rack to press—lifts barrels, boxes—helps load trucks—or as a handy adjustable shop table. Automatic brake holds load at any height.



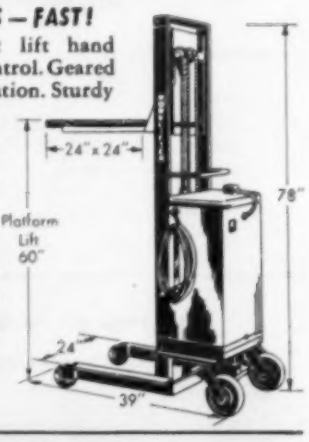
Type D — Hand operated. Cap. 500 lbs. **$183.60**
Type DE — Electric operated. Cap. 500 lbs. **$412.08**
Type DX — Hand operated. Cap. 1000 lbs. **$349.52**
Type DX — Hand operated. Cap. 2000 lbs. **$417.52**

Floor lock included. Prices net, f.o.b. Chicago.

WORKLIFTER

STACKS 1000 LB. LOADS — FAST!

Battery powered, hydraulic lift hand truck. Push button remote control. Geared pump for smooth, quiet operation. Sturdy structural steel frame. 12 volts (two six volt batteries) lifts loads fast. Built-in, 8 amp/hr battery charger. Power shut-off to prevent excessive overload. Roller bearing, solid hard rubber wheels.



60" platform lift, $695.00. 80" platform lift, $795.00. Adjustable fork models for pallets from $810.00. Many other models for special applications.

ELEVATING TABLE

ADJUSTABLE HEIGHT — 2000 LBS. CAPACITY

For feeding sheet stock, supporting fabricated frames, handling heavy dies or as a portable work bench.

Self-locking worm and screw elevating mechanism holds work at any height without danger of falling.

Table dimensions 24" x 36". Height adjustable between 24" minimum and 42" maximum. Foot operated floor lock holds table stationary when not in use.

Net price, $210.80 f.o.b. Chicago.

Representatives and Distributors In All Industrial Areas

ECONOMY ENGINEERING CO., 4502 W. Lake St. Chicago 24, Ill.
ESTABLISHED 1901

If you write maker identify as IEN - 10969

AMS helps customer save $24,000 a year!

9 Fixtures, Costing Under $2,000 Effect Huge Annual Saving!

● When a manufacturer builds a good product . . . that's interesting; BUT, when a manufacturer builds a superior product that each year saves the buyer *12 times* what he pays for it . . . *that's news!* One of ALLIED METAL SPECIALTIES' customers, a leading aeronautical manufacturer, gave Allied the job of designing and fabricating 9 fixtures, for their plant. Allied not only designed and built the fixtures, they engineered a $2,000 a month saving into the customer's line. How many fixtures, retorts, baskets, trays, racks, crates or muffles have you bought that will save you that kind of money?

Why not get the whole story from an Allied sales engineer? Just contact:

AMS Allied METAL SPECIALTIES, INC.

P. O. Box 235-D • Hampden Station • Baltimore 11, Maryland

- Design and Fabrication
- All Metals and Alloys

Baskets • Crates • Trays
Racks • Fixtures
Muffles • Retorts

If you write maker identify as IEN - 10970

Aluminum-painted oil tanks at Lever Brothers' soap, detergent, shortening and margarine plant, Edgewater, N.J.
Aluminum Paint: The Debevoise Company, Brooklyn, N.Y.

LEVER BROTHERS FINDS ALUMINUM PAINT MORE ECONOMICAL • MORE DURABLE MORE ATTRACTIVE

Lever Brothers Company uses aluminum paint for general outdoor painting of storage tanks, pipelines and structural steel because it has "better lasting quality and is, therefore, more economical than other paints. It is also a better appearing paint for the outdoors," they add.

Aluminum paint has proved to be unequalled for economy, durability and beauty. That's why you find it specified as the standard protective coating throughout industry.

ALCOA does not make paint, but ALCOA Aluminum Pigments are used in more aluminum paints than any other brand. Special formulas have been developed by your paint manufacturer to solve individual problems. Paints made to these formulas actually cost you less, last longer, give utmost protection against heat, cold, sun, rain, smoke and fumes. Write us today for FREE BOOKLET, *Painting with Aluminum.*

FREE BOOK full of ideas you can use

Contains important information on proper application and selection of aluminum paint. Answers many industrial painting questions.

Write for your free copy today.

PAINT SERVICE BUREAU
ALUMINUM COMPANY OF AMERICA
1787-K Alcoa Building
Pittsburgh 19, Pa.

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

If you write maker identify as IEN - 10972

Cleaning - Steam spray machine delivers hot water, solvent or steam

Source: VAPOR HEATING CORP.
6420 W. Howard St., Dept. IEN, Chicago 31, Ill.

Adjusts between 75 and 290 pounds

Model 4989-G is a new portable unit in the company's Vapor-Clarkson line of Hydro/Steam machines. It will deliver 1,200 gph. of hot water at 240-lb. pressure and 180 deg. F. It will deliver the hot water under pressure mixed with a cleaning detergent. It will deliver steam alone or in connection with a detergent.

The machine is designed for heavy duty cleaning work such as railroad cars, freight trucks. It will remove odors and difficult materials in food and chemical processing plants. It will decontaminate buildings and equipment in areas damaged by flood waters.

Assembly is on a two-wheel trailer with a door equipped metal cabinet. Fuel tanks for 8 hr. of operation and a float controlled water supply tank are included in the assembly with high pressure steam hoses and a cleaning gun. Steam is generated by a 40-hp. oil fired Vapor-Clarkson unit that develops 120 lb. of working pressure from cold water in 2 minutes. It delivers 1,100 lb. of steam per hr. through a Sellers injector.

The steam heats the water and pressure is increased by a venturi in the injector to 240 lb. for delivery. Drive is by a 4½-hp. gasoline engine or by a 2-hp. electric motor to a feed water pump, blower, fuel pump and magneto for constant ignition. Hot gases from the forced draft of the fuel oil fire wipe over the patented steam coils in the generator.

If you write maker identify as IEN - 10973

Valve - Four way design, adjustable flow control, to 150 pounds

Source: AIRMATIC VALVE INC.
7317 Associate Ave., Dept. IEN, Cleveland 9, Ohio

For cylinder operation

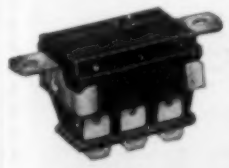
Hand or foot operation can be specified for this new four-way assembly in the company's line of pneumatic and hydraulic operating valves. Each is equipped with the patented built-in venturi type flow control. Operation centers at a single balance spool employing O-ring packings. The basic valve also is available for remote pilot cam, single or double solenoid operation, plain or with time delay. Four sizes carry ¼ to ¾-in. threaded pipe connections. Maximum recommended pressure is 150 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10974

FOR PUBLIC ADDRESS, RADIO, and kindred fields, specify JONES 400 SERIES PLUGS AND SOCKETS of *proven* quality!

P-406-CCT



S-406-AB

Double Contact Area

Phosphor bronze knife-switch socket contacts engage both sides of flat plug contacts.

Socket contacts phosphor bronze, cadmium plated. Plug contacts hard brass, cadmium plated. Insulation molded bakelite. Plugs and sockets polarized. Steel caps with baked crackle enamel. 2, 4, 6, 8, 10, 12 contacts. Cap or panel mounting.

Information on complete line, in Jones Catalog 20, Electrical Connecting Devices, Plugs, Sockets, Terminal Strips. Write

Jones HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as IEN - 10975

THE HAMILTON
PORTELVATOR®
(Portable Elevating Table)

MAKES IT *Easy* TO LIFT • LOWER LEVEL • TRANSPORT LOADS UP TO 5,000 lbs.

3 TABLE SURFACES
Can be worked at from **ALL 4 SIDES**

Slow or fast lift.

Self locking at any height.

4 POINT SUPPORT
(table can't tip)

Lift mechanism can be operated from either end.

Turns easily on anti-friction casters. Positive floor lock.

WELDED CONSTRUCTION

FREE BULLETIN
Write The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio. Ask for Bulletin No. 5412.

*THREE STANDARD MODELS TO CHOOSE FROM

IT'S A *Hamilton Tool*
USE IT WITH CONFIDENCE

If you write maker identify as IEN - 10976

For Best HIGH-SPEED Performance Use . . .

GENERAL WIDE-BASE PNEUMATICS

They save time • money • labor. Give you cost-saving advantages at all speeds.

General has pioneered every important advance in the field!

You can trust GENERAL'S complete line for the exact design for every purpose.

- More load capacity at low or high speeds
- Cushion equipment and loads reducing breakage and spillage
- Save high cost floors and floor surfaces
- Slow, even wear for long service
- High flotation for easier rolling over soft ground
- Rolls easier, smoother over all surfaces.

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 35"—200 to 7890 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid

CASTER FORKS

Wide-Base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

Swivel

SEND FOR CATALOG DEPT. 6

The GENERAL TIRE & RUBBER CO. Akron, O.

If you write maker identify as IEN-10978

It's Quality Deserves Consideration

FISHER LEVEL-TROL

Factory calibrating or zeroing adjustment produces a correct 3 to 15 pound signal output for full float range operation.

Simple level adjustment indicating dial.

Combined pneumatic proportional band and specific gravity adjustment.

Small compact relay unit, minimum working parts.

All welds are in accordance with ASME code for unfired pressure vessels.

Universally Accepted for

- LIQUID LEVEL CONTROL
- LIQUID LEVEL INDICATION
- INTER FACE CONTROL

Engineered for peak performance the Fisher Series 2500 Level-Trol is designed to give rugged, trouble-free service. It is high in sensitivity and accuracy . . . it is versatile in handling all kinds of liquids, with minimum service attention.

Fisher Bulletin F-3 gives full details . . . write for your copy today!

FISHER GOVERNOR COMPANY Marshalltown, Iowa

FISHER Since 1880

If you write maker identify as IEN-10979

Generalift Pallet Boxes CUT HANDLING and STORAGE COSTS 50%

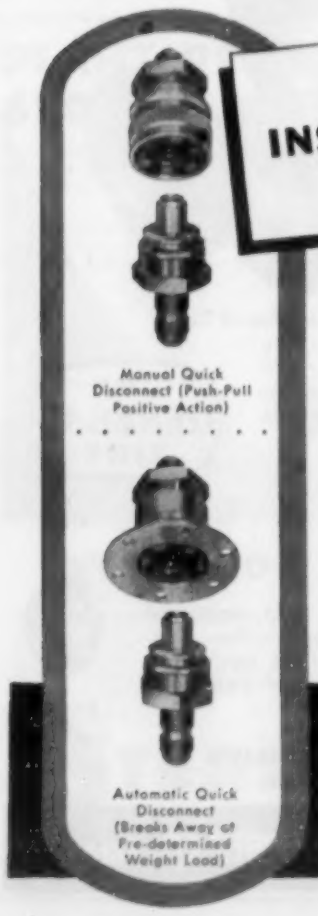
Send for free booklet

ENGINEERED CONTAINERS FOR EVERY SHIPPING NEED

General Box

1815 Miner Street, Des Plaines, Illinois

If you write maker identify as IEN-10980



WIGGINS INST-O-MATIC COUPLINGS

QUICK-DISCONNECT 3000 psi

for Low or High Pressure HYDRAULIC FUEL and PNEUMATIC systems

SIZES: 1/4" TO 2 1/2"

write for further information

Wiggins

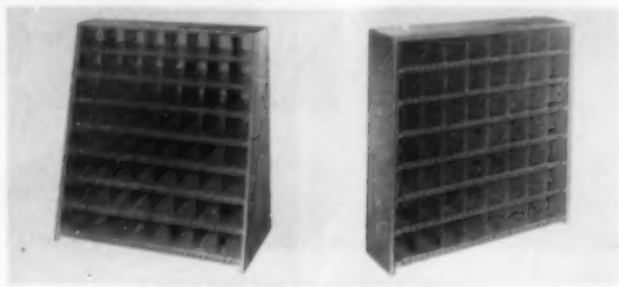
E. B. WIGGINS OIL TOOL COMPANY, INC.

3424 East Olympic Boulevard Los Angeles 23, California

If you write maker identify as IEN-10981

Storing - Adjustable steel bins to hold small tools and work parts

Source: ANGLE STEEL INC.
452 Thomas St., Dept. IEN, Plainwell, Mich.



Particularly for tool rooms

Number 115, to the left in the illustration, and No. 120, to the right, are new steel storage bins with dividers adjustable on 1-in. spacings. Both bins are designed to fit into a standard width shelving unit. One measures 34¼ by 17¾ by 38 inches. The other measures 34¼ by 9¾ by 38 inches. Finish is in olive green baked enamel. Label holders are provided on each shelf. Check hooks can be specified.

If you write maker identify as IEN-10982

Printing - Photocopy machine, exposes, develops, delivers prints

Source: HUNTER PHOTO-COPYIST INC.
586 Spencer St., Dept. IEN, Syracuse 4, N. Y.

Cast aluminum housing

Hecco-Kwik trade names a new machine to take sheets to 14 in. in width for reproduction of material that has been written, typed, drawn or printed on translucent or opaque sheets. The machine is a companion unit to the larger Hecco-Matic, previously described IEN-8768-53. It employs two sheets of sensitized paper, one serving as the exposure negative and the other as the final positive.

The two are entered face to face into the developing compartment, after the negative and original have been passed through the light equipped exposure compartment. They move through a developing solution and then between drying rolls to issue together. They are peeled apart and the positive is ready for use. The cycle takes about 45 seconds.

If you write maker identify as IEN-10983

Microtape, a product of Microcard Corporation, Dept. IEN, LaCrosse, Wis., is a new combination of a 100-ft. roll of 16-mm. film and a pressure sensitive tape laminated on the back. The film is employed by the company to print from negatives, that you supply, prior to adding the pressure sensitive tape. The exposed tape is then processed and mounted on cards for convenient reference. About 2,200 pages, measuring 8½ by 11 in., can be included on a 100-ft. roll.

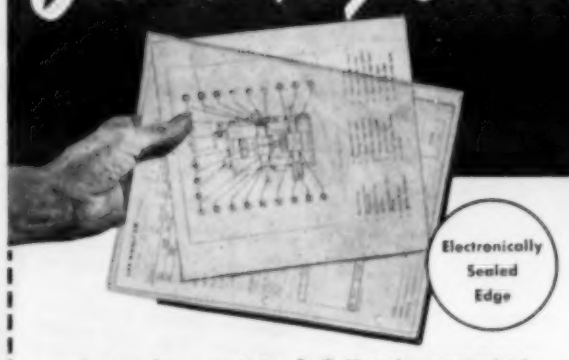
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-10984

PACIFIC-VINYL

The NEW Blueprint and Shop Envelope

Outlasts Any Other!



Save replacement costs. Pacific-Vinyl does not get brittle, does not tear, scratch, or wrinkle. Outlasts ordinary holders many times . . . because it is made of tough, transparent 12 gauge Vinyl plastic with electronic edge sealing instead of the usual edge stitching.

Increase efficiency. Pacific-Vinyl is glare-free, gives clear vision of the contents, resists acid and moisture.

Introductory special. Quantity of 50, shipping charges prepaid. 7" x 10" size, $15.00. 10" x 12½" size, $17.50. Satisfaction guaranteed or your money promptly refunded.

Free sample. A request on your letterhead does it. Write for further information on other sizes, prices, and quantity discounts.

PACIFIC PLASTIC PRODUCTS
Dept. I, 6402 Crenshaw Blvd., Los Angeles 43, California

If you write maker identify as IEN-10985

CUT COSTS with ALLEN *Punch Press*

$97.50 less Motor

1-Ton Power Bench Type

- Powerful
- Dependable
- Economical

FREE CIRCULAR

30-Day Money-Back Guarantee

Order TODAY

Price $97.50 F.O.B., Clinton, Mo. (Includes motor bracket, V-belt, motor pulley, less motor)

For light work — stamping, forming, riveting—metal, fiber or other material.

Overall height 17½" . . . Base size 8½" x 8½" . . . Die bed 5½" x 8½" . . . Ram face 1½" x 3½" . . . Ram Stroke ¾" . . . positive ¾" ram adjustment . . . sturdy, single pin, non-repeat hand lever clutch . . . V-belt drive . . . weight 105 lbs.

Requires only ¼ to ½ H.P. motor.

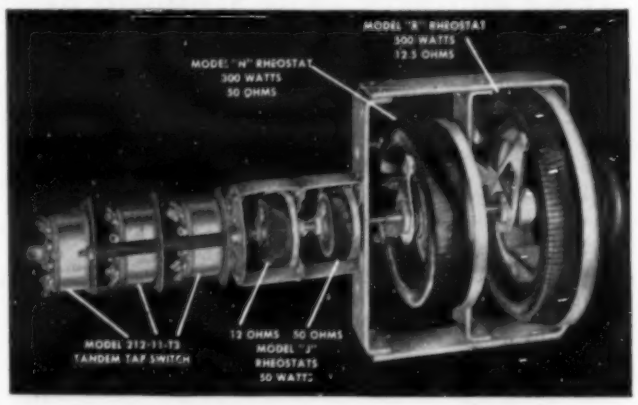
The machine of a thousand uses! Adequate for many types of work now done on large presses at greater expense.

ALVA F. ALLEN • Dept. IE • CLINTON, MO.

If you write maker identify as IEN-10986

OHMITE RHEOSTATS IN *Special Tandem Assemblies*

MADE TO ORDER TO SOLVE YOUR UNUSUAL CONTROL PROBLEMS



The above device was specially developed by Ohmite engineers to solve an unusual control problem—how to test and demonstrate various methods of A-C motor speed regulation *with one-knob control.* The result was a special combination of four standard Ohmite rheostats and three standard Ohmite 11-position switches, all coupled together in tandem, and operated by one knob. Any or all units can be connected in the test circuit or wired in any desired fashion. This is only one of innumerable combinations of rheostats, resistors, and tap switches that Ohmite can engineer for special jobs. Why don't you consult Ohmite about your own special control problems.

Write on Company Letterhead for Catalog and Engineering Manual No. 40

OHMITE MANUFACTURING CO.
3619 Howard St., Skokie, Ill.
(Suburb of Chicago)

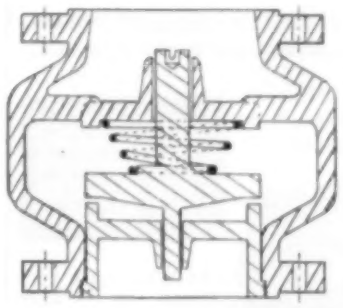
Be Right with OHMITE

RHEOSTATS • RESISTORS • TAP SWITCHES

If you write maker identify as IEN - 10988

MILLER
SHOCK PROOF—CENTER GUIDED
CHECK VALVE
A.S.A. DRILLING

for main line flow
of liquids and gases.
Sizes 1 to 24 inches.
Ratings 125 to 2500 lb.



- Center guided design
- Stops water hammer
- Dampens line pulsation
- Prevents back flow
- Installs next to fitting
- Vertical or horizontal

Ask for Bulletin 153

This Bulletin gives complete details of this shockproof valve

MILLER VALVE COMPANY, INC.
Box 1255 • Dept. IEN • Pittsburgh 30, Pa.

If you write maker identify as IEN - 10989

HANDLING "TOUGH" MATERIALS?—

Left Top: *A 60' Carrier Natural-Frequency screening conveyor for clay products, with 24" pan made of ¼" steel plate. Capacity: 100 tons of 100-pound material per hour. 5 H.P. drive. Middle section of screen removed to show supporting bridge.*

Above: *Close-up of drive—note patented drive linkage which always places weight of vibrating pan and conveyed materials on the spring supports, and never allows these loads to be imposed on the eccentric shaft and bearings.*

Handling anything Hot, Sharp, Powdered, Oily, Abrasive, Sticky, Granulated or Stringy?

CARRIER Natural-Frequency Conveyors work on a unique, patented vibrating principle which permits them to handle many materials that are too "tough" for most screw, belt, apron, vibrating and other conventional types of conveyors. These spectacular new conveyors also substitute the natural resonance action of coil springs for brute force. Result—*a tremendous reduction in power . . . far less wear-and-tear . . . and an absolute minimum of maintenance and down-time!*

Carrier Natural-Frequency Conveyors—including vertical vibrating spiral types—are now racking up amazing conveying records for scores of America's biggest, most successful industrials. Let us prove to you that they will move *your* product more quickly, efficiently and economically. *Write for Bulletin 111—no obligation of course!* Carrier Conveyor Corporation, 2110 Frankfort Avenue, Louisville 6, Kentucky.

CHECK THESE CARRIER ADVANTAGES!

HIGH CONVEYING SPEED (Up to 100 feet per minute)
GREATER CAPACITY (Up to 200 tons per hour)
LESS POWER REQUIRED (About one-third as much as "competitive" equipment)
LESS MAINTENANCE & DOWN-TIME (Less power + good design = trouble-free performance)
NO DAMPENING UNDER LOAD (Designed with extra power for specified load, with positive stroke)
SELF-CLEANING (Continuous, smooth trough —no pockets)
COMBINES PROCESSING WITH CONVEYING (Can screen, dry, cool, dewater, blend, etc.)
WIDTHS FROM 6" TO 48" LENGTHS FROM 5' TO 250' (With pans 16 ga to ½" plate, of any metal, open or enclosed)
BALANCED, VIBRATION-FREE UNITS AVAILABLE (For use on ceilings or light floor construction)

CARRIER
~~NATURAL-FREQUENCY~~
CONVEYORS

If you write maker identify as IEN - 10991

Pump - Multi-stage centrifugal with motor for submerged well operation

Source: DEMING COMPANY
186 Broadway, Dept. IEN, Salem, Ohio

Bulletin 6710-20

Capacity ranges from 10 to 121 gpm. and application is in wells measuring 4 and 6 in. in inside minimum diameter for this new Figure 6710 and 6720 submersible pump. Each unit includes a vertical multi-stage centrifugal pump and motor, the latter located beneath the strainer intake to the main impeller housing. A length of water proof cable and the required motor control equipment are included.

The pump is intended for delivery to a pressure tank which can be located remotely from the well. The service line can be placed below ground so no pump house is required. The pump and motor are protected against freezing and tampering since they are located in the well water.

Figure 6710 is equipped with bronze turbine type bowls with streamlined waterways. Bronze bearings are located in each bowl. Figure 6720, for wells measuring 6 in. in diameter or larger, is fitted with bronze diffusers to guide the water from each impeller to the next. The diffusers are aligned in a tubular brass housing with bronze bearings. The enclosed bronze impellers are keyed to a stainless steel shaft fitted with bronze sleeves at the bearing points. The stainless steel motor coupling is splined for alignment.

If you write maker identify as IEN - 10992

Truck - Motor driven tractor has normal 600 lb. rated draw bar pull

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek 49, Mich.

Easy to operate

Electric Clarkat No. 24, with break-away drawbar pull of 2,400 lb., and Clarkat 30, with 3,000 lb. break-away rating, are new additions to the company's line of electrically operated equipment. The tractor is built upon a rigid box type frame made of ⅝-in. side and rear plates in welded assembly. A universal type coupler, available to order, employs a control lever mounted inside the driver's compartment. The battery compartment is located in front of the operator, over the steering axle assembly, for steering stability under maximum drawbar pull.

The drive motor is a series wound unit designed for heavy duty operation under frequent starts and stops with a loaded trailer train. The control provides four forward and four reverse speeds. Two 50-watt adjustable head lights, one tail light, a hook, pin and eye coupler are supplied.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10993

Reach hard-to-get-at screws with

"YANKEE"
OFFSET RATCHET SCREWDRIVER

No. 3400

Fits in vest pocket—yet has the power of a full 8-inch screwdriver. Needs only an inch or so of clearance. Two sizes to drive slotted head screws. Wherever good tools are sold—or write for full particulars. "Yankee" Tools, 204 West Lehigh Avenue, Philadelphia 33, Pa.

No. 3600-9

HANDY PLASTIC KIT

for mechanics who need ratchet screwdriver to fit hollow head screws. Features No. 3600 handle with 8 hex key adapters ranging from 5/64" to 5/16".

STANLEY ®

"YANKEE" TOOLS
A Division of The Stanley Works

If you write maker identify as IEN - 10994

5414

HOW DO *YOU* THREAD A PRECISION HOLE?

If your operation involves precision threading of precision holes, meet the

HAMILTON SMALL HOLE SUPER SENSITIVE PRECISION TAPPING MACHINE

Handles the smallest and finest tap to 10-32 inclusive.

Spindle idles in reverse, changes rotation instantly as pressure is applied to tap, reverses instantly as pressure is released.

Taps to the very bottom of blind holes without risk of tap breakage.

WANT COMPLETE FACTS?

Write for FREE Hamilton Bulletin No. 5414. Address The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio.

IT'S A *Hamilton Tool*
USE IT WITH CONFIDENCE

If you write maker identify as IEN - 10995

Curtis Terminal Blocks Make Better Connections Economically—Quickly. A type for every purpose.

CURTIS Type "E" Terminal Blocks
with wire clamp feature

No lugs, looping or hooking of wire

Without a doubt, the simplest space, labor and cost saving Terminal Block made. Stripped wire is inserted between clamping members without looping or other preparation and the screw tightened — it's there to stay unless the wire itself breaks. Screws nest in blind holes in the solid molded base, eliminating danger of shorting. The type "E" is factory produced in any number of terminals from 1 to 22.

Write for Bulletin DS-123. Also, ask about wide selection of other Curtis Blocks available.

CURTIS DEVELOPMENT & MFG. CO.
8214 North 33rd Street, Milwaukee 16, Wisconsin

If you write maker identify as IEN - 10996

Over 85% of the torque wrenches used in industry are

Sturtevant TORQUE WRENCHES
Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch grams
...inch ounces
...inch pounds
...foot pounds

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 10997

Your kind of . . .

Solenoid Valves

There *IS* something better in solenoid valves—the new Marsh Electrimatic. Bodies machined from solid brass stock mean extra strength, greater dependability. Coils are moisture and frost proof. Valves are tight seating, smooth, positive, quiet. Types for wide range of application: direct acting—or pilot operated for large capacity.

. . . Outline your conditions and we will tell you how we can help you with your Solenoid problems.

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp.
Dept. A, SKOKIE, ILL.
Export Dept., 155 E. 44 St., New York, N.Y.

If you write maker identify as IEN - 10998

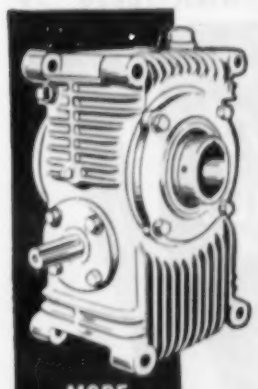
PIC STEEL UNIONS

Pics *look* good on new equipment because their brightness blends perfectly. Pics *operate* well because a special wedge type bronze seat gives a tight, safe closure. They're strong also — ends are heavy steel pipe coupling stock, uniformly flat-sided for speedy installation with open end wrenches. 100% zinc plating protects against rust. Pics sell for *less* than a galvanized, *no more* than a black malleable union.

For 150# Service — Write for FREE Samples

DART UNION COMPANY
130 Thurbers Avenue, Providence 5, R. I.

If you write maker identify as IEN - 10999



ANNOUNCING CONE-DRIVE SHAFT MOUNTED SPEED REDUCERS

MORE HP PER POUND
•
MORE HP PER CUBIC INCH
•
MORE HP PER DOLLAR

Here's a versatile new member of the Cone-Drive line. It's the only speed reducer that provides all the features of the double-enveloping worm gear design plus the many advantages of shaft mounting.

These new reducers can be readily motorized, too. A simple bell housing is available to accommodate standard NEMA C-type flanged motors without using expensive couplings.

Standard reduction ratios range from 5:1 to 60:1. Bore sizes accommodate shafts from 1" to 2½". All sizes are available from stock.

Complete engineering details in Bulletin CD-323. Ask for it.

CONE-DRIVE GEARS
Sharon Michigan Tool Company
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
7171 E. McNichols Road • Detroit 12, Michigan

If you write maker identify as IEN - 11000

Handling - Drop bottom box rides on fork truck, opens to one side

Source: UNION METAL MFG. COMPANY
1432 Maple Ave. N.E., Dept. IEN, Canton 5, Ohio

Lifts to open

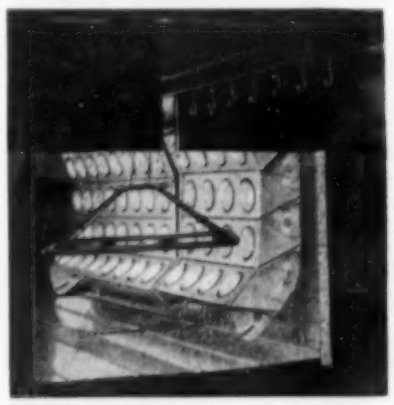
A steel plate is formed upward on two sides and is hinged to the bottom of the reinforced steel box to form this new unit in the company's Work-O-Matic line of materials handling equipment. The box rides in closed position on the forks of a truck. It lifts, as shown in the illustration, to permit the bottom to hinge open and discharge a load. Double locking tiering angles are provided on the four upper corners so several boxes can be stacked.

The unit applies also for work feeding at a machine with suitable support. Two sizes rate 2 and 3 ton in load capacity and have volumes of 11.2 and 20.2 cubic feet. Depending upon the position in which the box is picked up, it can be dumped to either side or to the front of a fork truck.

If you write maker identify as IEN - 11001

Drying - Infra-red equipment to mount in an existing oven structure

Source: PATENT-FLEX MFG. CO.
Box 205, Dept. IEN, Cloverport, Ky.



Conversion units

Assemblies of infra-red lamp fixtures, measuring 24, 32 and 48 in. in assembly length, are now available from the company to apply as conversion elements in changing over an oil or gas fired or electrically heated oven to one employing the hermetically sealed infra-red reflector heat lamps. Each assembly is equipped with mounting brackets so a number of lamp rows can be joined together side by side or end to end, or both, and set up in a curve or straight pattern.

If you write maker identify as IEN - 11002

New heat exchanger, employing thin wall alloy steel tubes, has been developed by Whiting Corporation, 15629 S. Lathrop Ave., Dept. IEN, Harvey, Ill., for use with either open or closed top cupolas. The new equipment provides a source for heated air to feed the cupola.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write maker identify as IEN - 11003

Ton-Grip
Made It Famous...
...VERSATILITY
Made It Grow!

Vise-Grip's powerful toggle action makes it the speediest all-purpose wrench, pliers, clamp or hand vise you can find. As ADAPTABLE as these pictures show! 7" and 10", only $1.85 to $2.60 at your supplier.

ALSO
- VISE-GRIP C-CLAMP $2.95
- VISE-GRIP Sheet Metal Tool 2.95
- VISE-GRIP Welding Clamp 2.95

MANUFACTURED ONLY BY

PETERSEN MFG. CO., DEPT. IE-10, DE WITT, NEB.

If you write maker identify as IEN - 11004

"FULFLO" CENTRIFUGAL **COOLANT PUMPS**

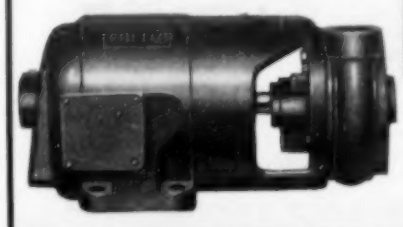
FULFLO PUMPS PAY FOR THEMSELVES IN PROLONGING TOOL EFFICIENCY

FIRST RULE FOR ANY TOOL KEEP IT COOL

A good rule, too, is to let FULFLO COOLANT PUMPS pump and circulate your coolants right to the right spot.

Direct, motor or belt driven. Vertical or horizontal installations. Capacities from ¼ hp to 1 hp; pipe sizes from ⅜" to 1½".

Write on your letterhead for professional edition of FULFLO MECHANICAL DATA BOOK



MODEL AG3M Belt Driven ¼ hp through MODEL AG7M 1 hp.

Pipe sizes ⅜" to 1½"

THE FULFLO SPECIALTIES CO. Inc.
PUMP AND VALVE MANUFACTURERS
BLANCHESTER, OHIO

If you write maker identify as IEN - 11005

If you need—but are not getting—pure, dry air from your compressed air lines—

absolutely free from all dirt, oil, moisture, odor, bacteria and other foreign matter that can be filtered—

We recommend your trying our Air Filters and Flow Equalizers

MODEL LP
Air pressure: 30 lb. and under
¼" pipe nipples

KOBY JR.
Air pressure: 90 lb. and under
¼" pipe nipples

MODEL S
Air pressure: 125 lb. and under
¼" and ½" nipples

Samples submitted for inspection and test purposes without obligation

THE KOBY CORPORATION
143 High Street • Boston 10, Mass.

If you write maker identify as IEN - 11006

PERISCOPES

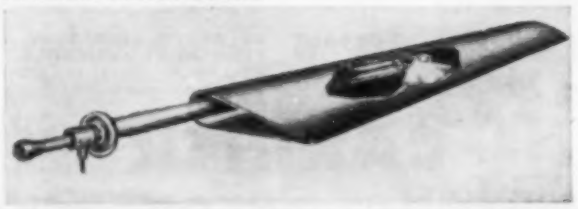
FOR REMOTE AND HAZARDOUS OBSERVATION

USUAL APPLICATIONS • •
- ATOMIC
- AIRCRAFT
- ARSENALS
- AUTOMOTIVE
- CHEMICAL
- METAL & OIL INDUSTRIES

FROM A FEW INCHES TO 85 FT. IN LENGTH
DESCRIBE YOUR PROBLEM FULLY GIVING DIAMETER, LENGTH, IRREGULARITIES, AND OTHER PARTICULARS. DRAWINGS HELPFUL.

BORESCOPES

TO DETECT HIDDEN DEFECTS



LENOX INSTRUMENT COMPANY
2007 Chancelor Street, Philadelphia 3, Pa.

If you write maker identify as **IEN - 11007**

How to eliminate *this wasteful nuisance . . .* SMOKE

Your company can be rid of smoke and save on fuel bills simply by installing inexpensive smoke controls that *really* work.

A properly fired burner does not smoke! *Fireye* smoke controls assure maximum firing efficiency and economy by warning operating personnel when smoke exceeds satisfactory firing conditions or violates your local smoke ordinance.

Call in your local *Fireye* Smoke Control salesman. He'll demonstrate this modern, simple photoelectric method that's being used throughout the country. Call or write Combustion Control Division, Electronics Corporation of America, Dept. C7-10 Beacon St., Boston, Mass.

fireye

Photoelectric Smoke Controls

If you write maker identify as **IEN - 11008**

ALMCO

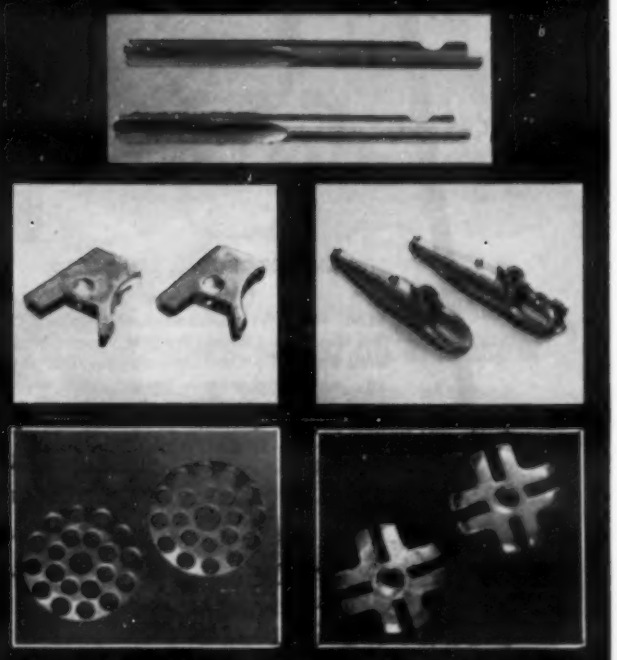
Supersheen

SPEED FINISHING

ALBERT LEA, MINN.

BARREL FINISHING ABRASIVE COMPOUNDS

THE RIGHT COMPOUNDS FOR YOUR SPECIFIC NEEDS—WITH THE RIGHT CHARACTERISTICS FOR BEST RESULTS



Supersheen Abrasive Compounds are formulated for use with *all types* of barrel finishing machines—they produce an infinitely *superior* grinding action—and can be used with *all types* of chips or metal media. They will increase the cutting action of any chip—and long-lasting qualities reduce your compound cost.

Send today for complete details of Almco Supersheen Compounds. Over 40 different standard types.

ALMCO *Supersheen*

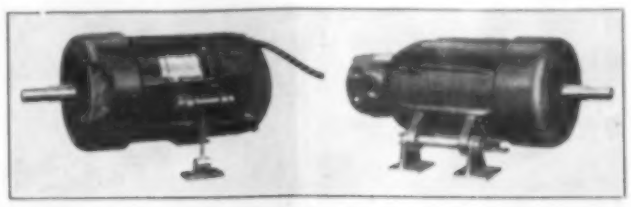
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS

ALBERT LEA, MINNESOTA

If you write maker identify as **IEN - 11010**

Motor - Totally enclosed design mounts under textile spinning frame

Source: RELIANCE ELECTRIC & ENGINEERING CO.
1088 Ivanhoe Road, Dept. IEN, Cleveland 10, Ohio



Externally mounted brake

New motor is designed for individual drive on the spinning frames in a textile mill. It saves space, in comparison with the normal overhead mounting, by applying beneath the frame. It connects by belt. Tension is adjustable by a single jack screw on a swivel mounting. An integral brake can be specified. The special induction unit is totally enclosed against entrance of lint and is equipped with a fan beneath a shroud at one end to move cooling air over the housing. The fan prevents hot spots on either the motor or the spinning frame at the motor position. The three-point pivoted mounting assists in aligning the belt. Smooth contours and "hot bake" finish prevent lint from adhering.

If you write maker identify as **IEN - 11011**

Fastening - Powdered metal washer made in two parts with spherical seat

Source: LODDING INCORPORATED
79 Beacon St., Dept. IEN-8, Worcester 1, Mass.

Tool parts catalog upon request

Strength and uniformity characterize a new two-part spherical seat washer which the company has added to its line of tooling components. The powdered metal retains lubricant. Outside diameter ranges from 5/8 to 2 7/8 inches. Bore is 9/32 to 1 3/16 inches. Height measures 3/16 to 1/2 inch.

If you write maker identify as **IEN - 11012**

Floors - Steel grating dockboard bridges between platform and truck

Source: BUSTIN FIRM-GRIP GRATING CO.
Dept. IEN, Dover, N. J.

Light and strong

Loading Ramp is the company's designation for this new steel grating dockboard. The trucking and walking surface employs the Bustin Firm-Grip safety grating over which small industrial casters will roll readily. The assembly is light in weight without sacrificing strength. It provides a safe walking and rolling surface. Built-in safety pins provide a non-slip grip. Two sizes are 30 in. in length and 20 or 30 in. in width.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 11013**

MAXIM SNOW THROWERS

take the Work out of Winter

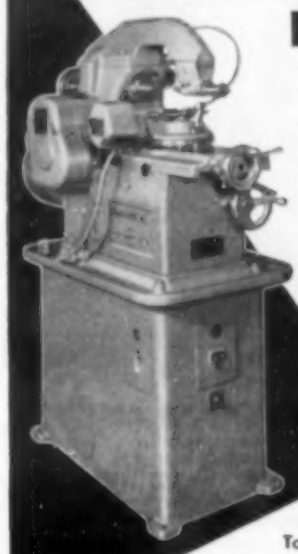
Cut your snow removal costs with powerful Maxim Snow Throwers. No pushing. No built-up banks. They eat into the snow and whirl it away. Four models, 4.6 to 46 h.p. 3000 in use today. All-year-round attachments for mowing, rolling, hauling and grading. Write Dept. TW for full details.

THE MAXIM SILENCER COMPANY
71 HOMESTEAD AVENUE • HARTFORD 1, CONN.

If you write maker identify as **IEN - 11014**

5417

This GEAR HOBBER delivers *EXTRA* PRECISION



The Hamilton Precision Gear Hobber generates small, fine pitch gears to 6" O.D. of the gear blank. Alignment and trueness of all spindles held to less than .0002".

WHAT'S MORE

Independent selection of speed, feed, and indexing speeds machine set-up and provides a means for matching cutting speed and work feed to the material being machined.

WANT ALL THE FACTS?

Write for Hamilton Bulletin No. 5417. Address The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio.

IT'S A *Hamilton Tool*

USE IT WITH CONFIDENCE

If you write maker identify as **IEN - 11015**

LAMPS

...via Graybar

There's no substitute for proper lighting . . . just as there's no substitute for dependable fluorescent and incandescent lamps made by General Electric and distributed by Graybar. For any lamp or lighting need, call your nearby Graybar office—they'll be glad to serve you.

FREE . . . Booklet gives formula for savings through group relamping

Booklet compares cost of Group Relamping with old-fashioned spot replacement . . . shows how you can save 60% or more in relamping labor costs right from the start. Send for your copy of "Formula for Savings"—a helpful guide to estimating savings in your plant. *Graybar Electric Company, Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*

385-1210

Call Graybar *first* for . . .

Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as **IEN - 11016**

UNIT 357 MOBILE CRANE

- Self-Propelled
- Rides on Rubber
- Has 1001 Uses

Speed Up Material Handling

Here's a handy, mobile crane for lifting or loading jobs around your plant. Ideal for dismantling, moving or erecting machinery . . . loading and unloading structural iron, pipe, bars, lumber and equipment of all types. The UNIT 357 is self-propelled . . . rides on rubber at road travel speed . . . is easy to maneuver even in cramped yard conditions. Operated by ONE man . . . powered by ONE engine . . . swings in a 360° circle. Full vision cab gives complete visibility. Promotes Safety. Write for Catalog.

UNIT CRANE & SHOVEL CORP.
6605 W. Burnham Street, Milwaukee 14, Wis., U. S. A.

UNIT

CRANES • CLAMSHELLS • MAGNETS

If you write maker identify as IEN - 11017

An *alert* watchman would have fought that fire *before* it got out of control. Play safe with the Detex GUARDSMAN Watchclock . . . . . which *keeps* watchmen on their toes nights, days, weekends, holidays.

Don't wait for disaster to strike. Today write for free folder.

DETEX
WATCHMENS CLOCKS

PATROL
ALERT
ECO
NEWMAN
GUARDSMAN

DETEX WATCHCLOCK CORPORATION
Dept. E-10
76 VARICK STREET, NEW YORK 13, N. Y.
Sales and Service in All Principal Cities

If you write maker identify as IEN - 11018

HUPPERT KH 1200 LABORATORY OVEN

Equalized oven heat at all times

$95.00
Complete with thermostatic control and heat range switch

All Stainless Steel
$125.00
(Thermometer $5.00 extra)

Results from Huppert Ovens are Always Accurate. Thermostatic control accuracy ½ of 1° C. at any setting up to 425° F.—220° C. This is achieved by a double venting system for constant dispersion of fumes and other exhaust air, permitting a cleaner operation and better distribution of heat. Work chamber is stainless steel 12" x 10" x 10".

ALSO HUPPERT 5700 SERIES OVEN

Model	I. D. Wide	I. D. High	I. D. Deep	Wattage	Temp. Range	Price
5700LT	20"	15"	19"	1650	350° F. Maximum	$180.00
5700MT	20"	15"	19"	1870	400° F. Maximum	180.00
5700HT	20"	15"	19"	2250	500° F. Maximum	180.00

1 hour timer — $10.00 additional

Write for literature

K. H. HUPPERT COMPANY
6856 Cottage Grove Avenue, Chicago 37, Illinois
Manufacturers of Electric Furnaces and Ovens

If you write maker identify as IEN - 11019

GEAR PROBLEMS?
Check with-
FAIRFIELD!

If you use gears in the product you make, we believe it will pay you, as it has others, to become acquainted with FAIRFIELD—the place where fine gears are produced to meet your specifications EFFICIENTLY, ECONOMICALLY! Fairfield's production facilities are unexcelled for making all kinds of accurate, automotive type gears such as are now finding wide use in all branches of industry: for tractors, trucks, and buses . . . for agricultural implements . . . for construction machinery . . . for machine tools. Ask for latest literature describing Fairfield's facilities. Your inquiry will receive prompt attention.

FAIRFIELD
Manufacturing Co.
2333 S. Concord Road
LAFAYETTE, INDIANA

If you write maker identify as IEN - 11020

Press Tools - Bed rail adapters to position Wales punch and die units

Source: WALES-STRIPPIT CORPORATION
361 Payne Ave., Dept. IEN, North Tonawanda, N. Y.

Detail information in Bulletin 14-27

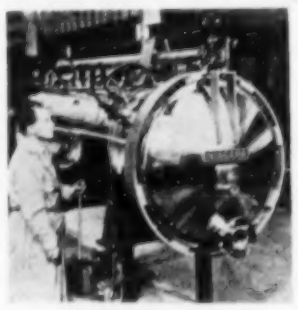
A new bed rail, to which the Wales punch and die units can be clamped, and a new set of bed rail adapters are available to quickly position the punch and die units to a predetermined hole pattern. The rail mounts between the side frames of a press brake. The adapters assemble in the rail where they are held by spring check steel balls. They are positioned laterally by setting them to a scale on the front of the bed rail.

The adapters carry two pilot pin holes, on one face, to locate the die units for straight line hole punching. On the opposite face is a slot that permits moving the units to a desired location, front or back, for staggered hole patterns.

If you write maker identify as IEN - 11021

Filtering - Quick-opening door for company's line of liquid filters

Source: AMERICAN MACHINE & METALS INC.
554 12th Ave., Dept. IEN, East Moline, Ill.



Niagara design

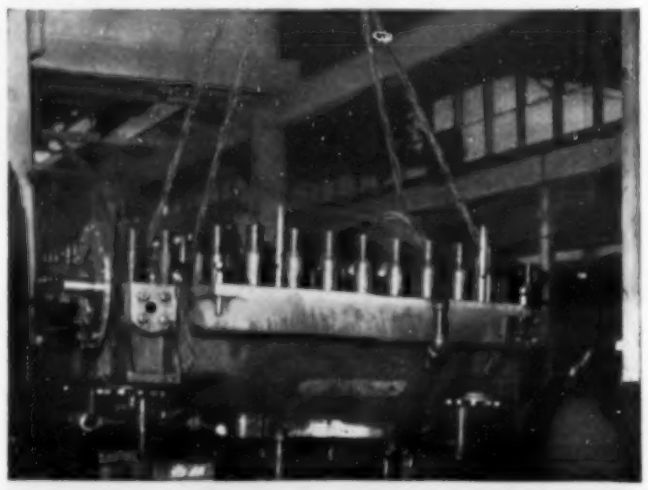
Two cylinders, powered by a hand operated hydraulic pump, rotate a locking ring that forms part of the assembly of this new quick-opening door. The ring movement locks the door against a gasket ring or releases it so it can be opened quickly without manual effort. The door cannot be opened until wedges on the locking ring and the cover clear each other. **Pressure** is released at the first movement of the wedges so the interior of the filter housing is not under pressure when the door is actually released. The new door is standard equipment on the company's horizontal filters and can be specified on the vertical assemblies.

If you write maker identify as IEN - 11022

Perhaps you can suggest possible uses for a new suede pressure sensitive tape that has been developed by Minnesota Mining & Mfg. Co., 900 Fauquier St., Dept. IEN, St. Paul 6, Minn. The adhesive face is protected with a removable paper liner. The opposite outer face presents the suede surface. The tape is available, at present, in ½ in. by 3-yd. red or green sample rolls. It can be made in ½ to 26 in. width on 36-yd. rolls and in 18 possible colors. A sample roll will be sent to you for your examination and use suggestions upon request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11023



WICKWIRE SLINGS
with complete line of fittings

Wickwire Rope slings are offered in both braided and single-part construction; available with a complete line of fittings to meet all types of service requirements. For detailed information write to Wire Rope Sales Office, Palmer, Mass.

WICKWIRE ROPE
CF&I PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 11024

Just a single stroke!...
CUTS ROUND RODS ⅛" to ⅞" on a
MARVEL ROD CUTTER

Available in three models:

No. 5	⅛	3/16	¼	5/16	⅜
No. 6	⅜	7/16	½	9/16	⅝
No. 7	⅜	½	⅝	¾	⅞

These are bench models, but the No. 7 MARVEL Rod Cutter can be furnished mounted on legs. See your Industrial Distributor or write us for literature and prices.

ARMSTRONG-BLUM MFG. CO.
5700 W. Bloomingdale Ave. • Chicago 39, U.S.A.
Manufacturers of the outstanding MARVEL Metal Saws.

If you write maker identify as IEN - 11025

FOR FIVE, CLEAR-CUT REASONS IT PAYS TO KNOW PARTLOW

Take RECORDING CONTROLS, for instance

SEND NOW for new condensed Catalog CC. See the seven different Partlow Mercury-actuated Recording Controls — designed to give you automatic process control, continuous temperature indication, permanent records, limit arrangements and hazardous location applications. Select controls tailor-made for your equipment — gas, oil, steam, water or electric. Available with electric or spring-driven chart drives — 24-hr., 48-hr., 7-day or any given cycle . . . 10 temperature ranges from -30° F to 1200° F.

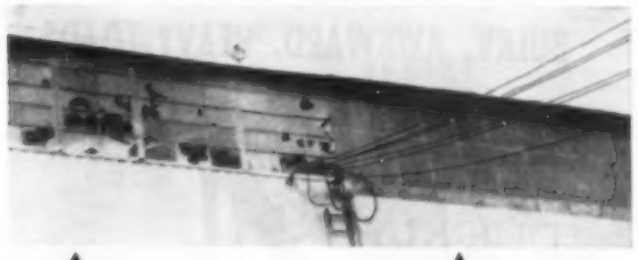
All give you these important Partlow advantages:

1. **DIRECT-ACTING** hermetically sealed Mercury Bulb instrumentation. Positive, precise, sensitive — never temperamental.
2. **INTERCHANGEABLE ELEMENTS** — for quick, easy field replacement, without returning control to factory.
3. **ACCURATE CALIBRATION** — conservatively, within 1% of scale range.
4. **LONG LIFE** — thick-walled capillaries and seamless tubing assure almost indefinite life.
5. **LOW MAINTENANCE** — few moving parts — no need for compensators.

partlow
the pioneer in mercury thermal controls

Offices in All Principal Cities
THE PARTLOW CORP., NEW HARTFORD, N. Y.

If you write maker identify as **IEN - 11027**



STOP THIS ▲ WITH RESOLITE ▲

Material represents less than 20% of the cost of reglazing. The *real* cost is high-priced labor. You can end expensive pane replacement with Resolite.

A fiberglass-reinforced polyester resin, translucent Resolite can't shatter or crack when hit by flying objects or subjected to severe vibration. It is unaffected by weather extremes of heat, cold or moisture and by usual industrial fumes.

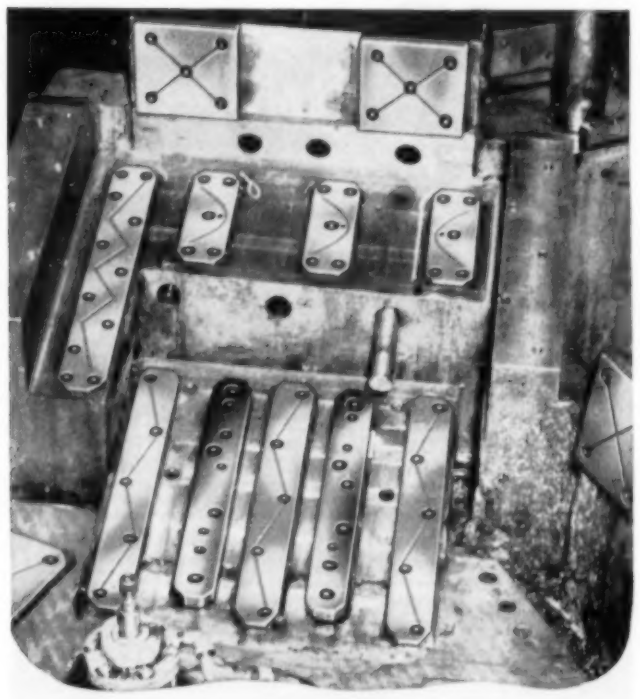
Flat Resolite panes, factory cut to size, are installed like glass.

For skylights or sidewalls in corrugated buildings, Resolite is molded to nest with all standard metal or asbestos corrugated sheets. Resolite passes up to 90% as much light as clear glass — a soft, diffused light which reduces eyestrain.

For further information see Sweet's Plant Engineering File or write:

RESOLITE CORP., Box 514, Zelienople, Pa.
Distributors in principal cities, U.S. and Canada

If you write maker identify as **IEN - 11028**



THEY'RE OK HERE

. . . long wearing, economical OK aluminum bronze wear plates

Practically every important automobile manufacturer now uses OK aluminum bronze wear plates on body dies.

By a unique cladding process, long-wearing aluminum bronze is bonded to a machinable steel base. Cost is drastically lower when compared to solid cast bronze plates. A finer quality bearing surface is obtained, resulting in longer life. When fitting is required to suit die, steel backing of plate is easily machinable, and no difficulty is encountered drilling or counter boring through bronze surface. OK aluminum bronze plates are applicable wherever a die has a sliding or cam action. A large selection of sizes of OK aluminum bronze plates is carried in stock . . . finished ground, flat and parallel . . . ready to ship. Simply send your drawings or sketches to our engineering department.

For complete information write Dept. 12-J

Manufacturers for the metal working industry of:
SLITTER KNIVES • SHEAR BLADES • BRONZE WAYS
ROTARY SHEAR KNIVES • HARDENED SPACERS
BALL RACES • HARDENED WAYS • WEAR STRIPS • GIBS

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

If you write maker identify as **IEN - 11030**

Extinguishing - Hand type unit holds chemical powder under pressure

Source: RANDOLPH LABORATORIES INC.
8 E. Kinzie St., Dept. IEN, Chicago 11, Ill.

Catalog DC-62254

Four sizes holding 6, 12, 20 and 30 lb. of dry chemical powder under 500 lb. pressure are included in a new Underwriters' Approved line of fire extinguishers. The largest, 30-lb. size, is mounted in a truck frame equipped with hard rubber wheels. The other three are intended to be carried by the operator.

Each is painted a brilliant yellow and is equipped with color gages to indicate weight so an empty extinguisher can be spotted quickly for refilling. The brass valve, trigger and trigger guard are designed for heavy duty service indoors or outside. The company is prepared to supply the refill chemical and to pressurize.

If you write maker identify as **IEN - 11031**

Handle - A product component made by die-casting, smooth grip area

Source: A. L. HANSEN MFG. COMPANY
5051 Ravenswood Ave., Dept. IEN, Chicago 40, Ill.

Weighs 5 ounces

Overall length of this new die cast handle is 4½ inches. Thickness is ⅝ inch and head diameter is ⅞ inch. The curved grip extends 1¼ in. from the mounting surface. Finish can be plain or bright nickel. A die cast bushing is provided to insert a $\frac{5}{16}$ in. shank.

If you write maker identify as **IEN - 11032**

Furniture - Steel work bench fitted with 2 in. laminated maple top

Source: INDUSTRIAL BENCH & EQUIPMENT MFG. CO.
98 South St., Dept. IEN, New Britain, Conn.

Available from stock

Box section steel legs support a steel shelf and angles, reaching from the front to the back, on which the laminated wood top of this new bench is mounted. Steel angles also are secured to the front and rear edges of the top to protect these edges and to provide a bearing edge over which metal can be bent. Two sizes measure 60 by 40 by 32 in. and 96 by 40 by 32 inches. The shelf measures 30 in. from front to back. Also available is a 48-in. width with a 36-in. shelf.

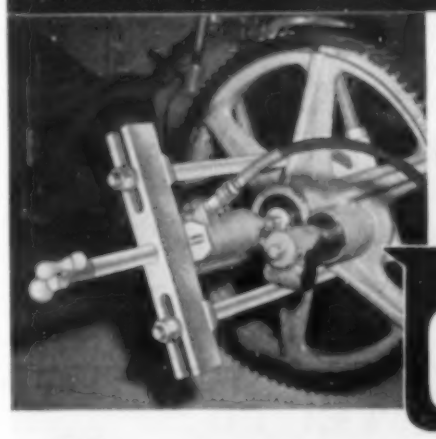
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 11033**

ASKANIA REGULATOR COMPANY
280 E. Ontario Street, Chicago 11, Illinois
Subsidiary of General Precision Equipment Corp.

If you write maker identify as **IEN - 11034**

PUSH . . . PULL 75% FASTER 90% EASIER



WITH THE CENTER HOLE OTC

50 TON HYDRAULIC PULLER

Removes or installs bearings, gears, pinions, shafts, studs, wheels, pulleys, etc.—75% faster and 90% easier. This new OTC 50 ton ram is completely portable (weighs only 45 lbs.)—has remote control pump—interchangeable ram heads—and can be used as a production holding fixture. Also available in 17½ and 30 ton sizes. *Booklet describes complete line and uses of OTC equipment.*

WRITE FOR FREE BOOKLET

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINN.

If you write maker identify as **IEN - 11035**

WHY NOT PUT OUR BRAINS TOGETHER?

MANUFACTURERS are continually buying flat spring steel for entirely new end uses. Most of these new applications pan out satisfactorily. But if the flat spring steel doesn't do the job expected, the type of steel may be to blame, or perhaps it should be applied in a different way.

In case of trouble, let's put our brains together. Roebling is practically the nation's biggest producer of High Carbon Flat Tempered Spring Steel, and Roebling laboratories are always ready to tackle the special problems of manufacturers, engineers and designers. Just send details to Wire and Cold Rolled Products Div., John A. Roebling's Sons Corp., Trenton 2, N. J.

ROEBLING CF&I
Subsidiary of The Colorado Fuel and Iron Corporation

If you write maker identify as **IEN - 11036**

For low price per pound of lifting capacity, look into this Koehring 205 Crane. On crawlers, it lifts 10 tons; has 30 to 50-foot boom. As a rubber-tired truck crane it gives you 15 tons of lift capacity . . . boom lengths front 25 to 55 feet, plus 30-foot max. jib. Also handles ½ to ¾-yd. clamshell buckets on a wide work range . . . converts to ½-yd. shovel or hoe. See Koehring distributor for complete details . . . or write for bulletin on this new 205.

(Larger cranes up to 79½ tons)

KOEHRING CO., Milwaukee 16, Wisconsin

K443

KOEHRING CRANES

If you write maker identify as IEN - 11037

CAPCO Dock Covers completely enclose the space between car and building doorways protecting loading and unloading during bad weather... preventing accidents... insuring against loss of heat or refrigeration. 51 different models in any size for every loading problem.

CAPCO

Write for literature and name of nearest distributor.

• 622-24 PROSPECT AVENUE • KANSAS CITY 24, MISSOURI

If you write maker identify as IEN - 11038

is YOUR plant clean enough for precision defense production?

Model 218

Don't sabotage your plant facilities with dirt and debris. Clean plants measure up to defense production standards.

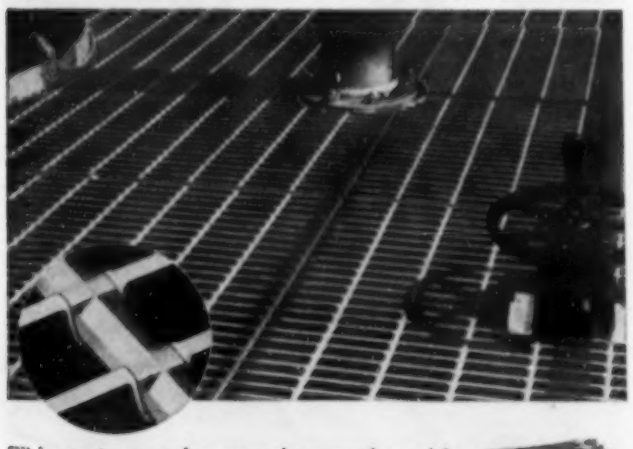
Send for important Doyle Vac-It information today. There's no obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as IEN - 11039

Gary WELDED GRATING IS TAILOR-MADE



This neat appearing one-piece grating with hexagonal cross bars and main bearing bars resistance-welded, provides durable, safe open flooring. It's factory-fabricated to your specifications to save you installation time and money. For complete details on Gary Welded, Gary Gratings, Gary Stair Treads and Gary-Irving Decking, send for Catalog IN-104

FREE SAMPLE
Write for paper weight size sample and descriptive catalog.

Standard Steel Spring Division

ROCKWELL SPRING AND AXLE CO.
4045 East Seventh Avenue • Gary, Indiana

If you write maker identify as IEN - 11040

Drive - Variable delivery pump and equipment for hydraulic pressure

Source: OILGEAR COMPANY
1567-A W. Pierce St., Dept. IEN, Milwaukee 4, Wis.

Packaged design

Illustrated is new Type AE-311 assembly of the company's two-way variable delivery pump with a geared head motor control, oil reservoir base and a 3-hp. main drive motor. The new unit is for variable speed straight line and rotary drive application. The pump provides maximum delivery at 1,120 cim. at a driving speed of 1,750 rpm. Maximum continuous working pressure is 1,140 pounds. This can be increased to a peak of 1,350 lb. at 10 per cent of cycle.

The assembly is available with hand screw control, automatic adjustable pressure unloading, local or remote hydraulic, electric or pneumatic control. The pump can be mounted on a reservoir integral with a machine or supplied with its own oil reservoir as shown in the illustration.

If you write maker identify as IEN - 11041

Bearing - Steel pillow block with roller bearing to press on shaft

Source: LINK-BELT COMPANY
307 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.

Ask for Book 2565A

Bore sizes range from a nominal 3 to 7½ in. in this new Series LPK7800F Mill Bearing. The design is characterized by its self-aligning roller bearing that press fits on the shaft. This compares with Series LPK6800F, previously described IEN-5979-54, that did not call for the press fit. The bearing is assembled in a steel housing fitted with flat spiral steel seals to keep out dirt and retain either oil or grease. Jack screw holes are provided in the cap to assist in its removal.

If you write maker identify as IEN - 11042

Television signals are checked by means of new equipment developed by Telechrome, Inc., 632 Merrick Road, Dept. IEN, Amityville, N. Y. Standard signals are sent to the various network stations during station breaks where instantaneous polaroid camera pictures are taken. Then the broadcasting station is able to prove that the signals were good at the point of origination.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11043

SEE WHAT'S NEW — *IN PHILADELPHIA*

Dec. 2-3-4-6-7 1954

21st NATIONAL POWER SHOW

NATIONAL EXPOSITION OF POWER AND MECHANICAL ENGINEERING

COMMERCIAL MUSEUM—PHILADELPHIA

The engineering knowledge and technical know-how of nearly 300 of the nation's leading manufacturers of power equipment will be at your disposal in this 5-day panorama of modern trends and techniques in Power.

Learn from the technical personnel in every booth the latest cost-saving improvements that can be adapted to your plant operation. See the displays of package boilers, condensers, pumps, valves, piping, fans, dust collectors, refractories, steam specialties, insulation, instruments, motors and controls, water treatment, power transmission and materials handling equipment, and many other products that may help to reduce costs and increase production in your plant.

Write early for hotel reservations and advance registration

Under the auspices of the ASME

MANAGEMENT: INTERNATIONAL EXPOSITION CO.
480 Lexington Avenue New York 17, N. Y.

If you write maker identify as IEN - 11044

BULKY, AWKWARD, HEAVY LOADS

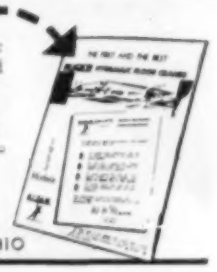
Handled
· EASILY
· SAFELY
· QUICKLY
for LESS

2 TON CAPACITY

SUBSTITUTE FOR AN ELEPHANT

GET THIS BOOK

Gives all the facts about Ruger's complete line of hydraulic floor and truck mounted cranes, capacities 1000 to 6000 lbs.



RUGER CRANES

613 West Fourth St UHRICHSVILLE, OHIO

If you write maker identify as IEN - 11045

SNAP-LOCK

plays vital part in new plant AUTOMATION PLANS

INGERSOLL says . . .

"For this special model, we again rely on 13 Snap-Lock switches to insure correct sequencing of all 6 operations for automatic milling of tops, bottoms and sides of sole plates for electric flat irons, at 1000 per hour — fastest rate ever attained."

The Ingersoll Milling Machine Co. at Rockford, Ill., top flight builders of precision automatic milling, boring and drilling machines, have for years standardized on Snap-Lock limit switches.

Snap-Lock is the heavy duty limit switch—quick-acting, positive, dependable—built *by* machine tool builders *for* machine tool builders.

In the 15 years since we first designed Snap-Lock to meet our own machine tool needs, it has been adopted as the standard switch equipment by 4 out of 5 of all builders of precision operated machine tools. Hundreds of users of other types of equipment also specify Snap-Locks—where control is vital, where lasting and service-free life is more important than mere price.

If you have a switch problem, choose from the wide variety of Snap-Lock standard types with regular or special mountings or, if you need a special application, let our engineers help you design Snap-Lock into your product.

Ask for Engineering Bulletin EM-51

ELECTRICAL MANUFACTURING DIVISION

The NATIONAL ACME COMPANY

170 EAST 131st STREET • CLEVELAND 8, OHIO

ACME-GRIDLEY BAR and CHUCKING AUTOMATICS
1-4-6 and 8 Spindle • Hydraulic Thread Rolling Machines • Automatic Threading Dies and Taps • Limit, Motor Starter and Control Station Switches • Solenoids • Contract Manufacturing

If you write maker identify as IEN - 11047

low current drain long life

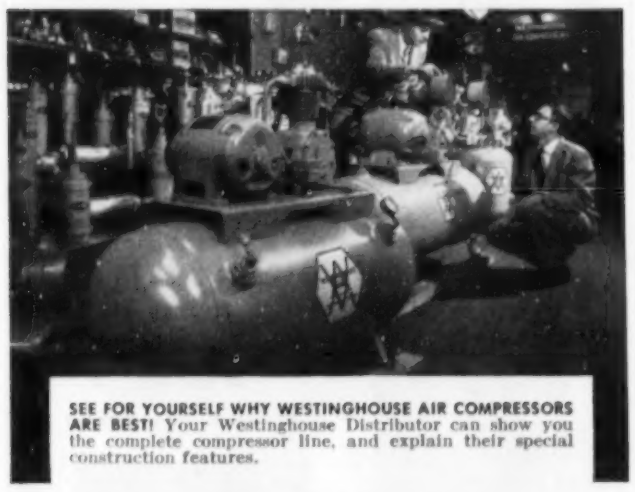
General Controls AV-1 Series electro-magnetic shut-off valves for pressurized liquid and gas control in mobile systems come both in disc and plunger types, all light-weight, low current, continuous duty, Hi-g resistance controls. The disc type features a disc-armature developed by General Controls for positive valve operation under extreme vibration conditions and acceleration forces to 300 Gs. The plunger type features a plunger-armature design with soft seat material suitable for liquid or gas control in temperatures ranging from –65° to 160°F.

General Controls
AV-1
Electro-magnetic
Shut off valves

GENERAL CONTROLS
Plants in: Glendale, Calif., Burbank, Calif., Skokie, Ill.
Factory Branches in 37 Principal Cities
SEE YOUR CLASSIFIED TELEPHONE DIRECTORY

Manufacturers of Automatic Pressure, Temperature, Level and Flow Controls for Heating, Home Appliances, Refrigeration, Industrial and Aircraft Applications.

If you write maker identify as IEN - 11048



You get a dependable air supply... with a Westinghouse Air Compressor

● If air is important in your station or shop, you want a reliable compressor. Westinghouse Air Compressors are rugged, and have many special safety features that prevent trouble. They include controlled pressure lubrication, low oil level protection and a positive starting unloader. All Westinghouse Air Compressors are factory tested.

Your Westinghouse Distributor can show you how these compressors work, help you select the right model and size, and give you quick repair service when it is needed. Call him. He's listed in the classified section of your telephone directory.

LE ROI

LE ROI COMPANY
A Subsidiary of Westinghouse Air Brake Co.
MILWAUKEE 14, WISCONSIN

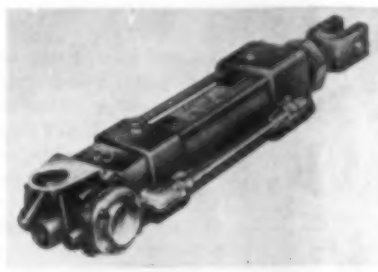
Plants: Milwaukee • Cleveland—Greenwich—Dunkirk, Ohio • Coldwater, Michigan
Manufacturers of air compressors, rock drills, engines, loaders and mixers.
Factory Branch: EMERYVILLE, CALIF. Distributors throughout the United States... Consult your Classified Directory.
Distributed in Canada by: Canadian Westinghouse Co. Ltd., Hamilton, Ont.

REPAIR SERVICE IS FAST. When something goes wrong with your air compressor just call your Westinghouse Distributor. An experienced maintenance man will be there within a few hours.

If you write maker identify as IEN - 11050

Cylinder - Double acting pneumatic with integral valve and controls

Source: LEHIGH FOUNDRIES INC.
1500 Lehigh Drive, Dept. IEN, Easton, Pa.



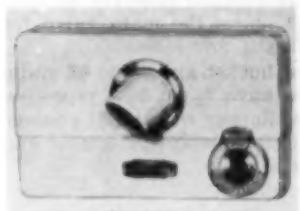
For specified use

Air Motor designates a new assembly of double acting pneumatic cylinder with a built-in four-way valve and a variety of electrical, mechanical and pneumatic valve controls. The cylinder is available in 1½, 2 and 3-in. bore and in specified stroke with adjustable cushions at either or both ends. Nine types of mounting are included in the line. Operating pressure is to 200 pounds.

If you write maker identify as IEN - 11051

Wash Rooms - Hot air blower replaces towels to dry hands and face

Source: CHICAGO HARDWARE FOUNDRY CO.
3503 Commonwealth Ave., Dept. IEN, N. Chicago, Ill.



Tamper proof

Semi-recessed design has been added to the Sani-Dri line of electric hand dryers for washroom use. Electric elements inside the housing heat the air. A motor driven blower delivers the air through a rotatable nozzle. A timing device shuts the blower off after a preset interval. Starting is at a push button in housing face. **The unit** is protected by a circuit breaker which opens the heating element circuit if the intake or outlet is blocked. The breaker closes the circuit when the block has been removed.

If you write maker identify as IEN - 11052

Feeding - Rotating hopper machine tumbles work pieces to delivery chute

Source: FEEDALL MACHINE & ENGINEERING CO.
38399 Pelton Road, Dept. IEN, Willoughby, Ohio

Largest of three units

Model 400 designates a new 24-in. assembly in the company's line of Tumble Hopper feeding machines. It is designed for products such as washers, nuts, stampings, headed parts to ½ in. in diameter. Drive is by a ¼-hp. 3-phase motor with built-in variable transmission. Assembly is on a flat base. The hopper is made of fabricated steel in rigid design. The company is prepared to make recommendations on receipt of blueprints or samples and data.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

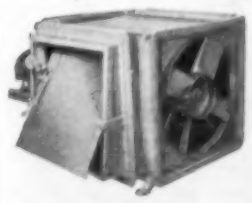
If you write maker identify as IEN - 11053

NEW

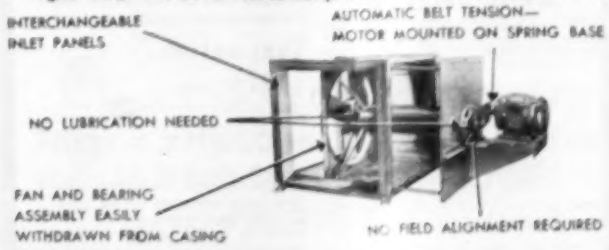
WING DRAFT INDUCER

ADVANCED DESIGN SETS NEW HIGH STANDARD

EASIER INSTALLATION • MORE ADAPTABLE • INSURES LONG, CAREFREE OPERATION



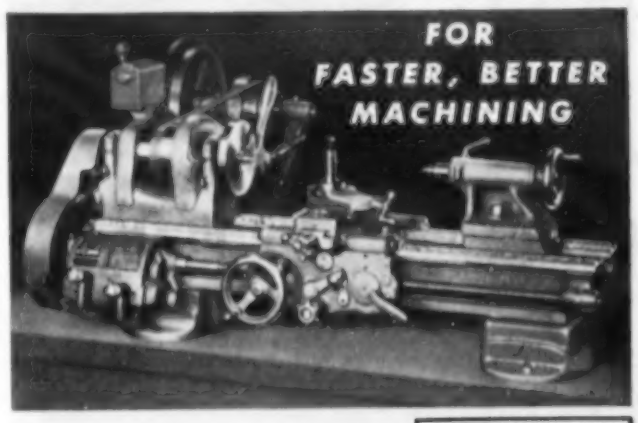
Wing Draft Inducers furnish positive uniform draft regardless of wind or weather conditions. They eliminate the need for tall, costly chimneys. Smoke and soot are reduced and boiler efficiency is improved. Higher CO_2's and better fuel consumption result. Write for Bulletin 1-52.

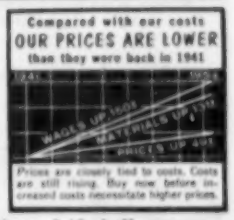


L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N.J.

If you write maker identify as IEN - 11054

SOUTH BEND 9" PRECISION LATHES



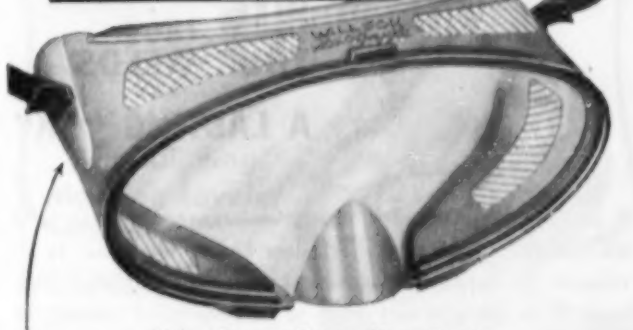


South Bend 9" lathes are built to produce faster and do better machining. We believe that no other lathe of comparable size and price can meet the requirements of industry as well. A South Bend 9" will handle efficiently all your small precision jobs. Prices in the 9" series start at $211.00, f.o.b. factory. We also manufacture larger lathes, 14" drill presses, 7" bench shapers and 8" or 10" pedestal grinders. Investigate South Bend machines today! Write for your catalog.

SOUTH BEND LATHE
SOUTH BEND 22, IND. • *Building Better Tools Since 1906*

If you write maker identify as IEN - 11055

IMPROVED No. 90A Series
WILLSON MonoGoggle



Wider, Deeper Frame Gives Greater Clearance Over Spectacles

We've taken the popular Willson MonoGoggle® design and made it with a deeper and wider pliable, transparent vinyl frame with grooves molded into the sides for extra roominess over glasses. It provides protection against light impact hazards on such operations as spot welding, buffing, wood working and chemical handling.

Ask your Willson distributor to show you the new No. 90A Series MonoGoggles, available with either direct or indirect ventilated frames or non-ventilated styles. Or write for bulletin.

Side view shows molded-in grooves in sides of frame provide ample clearance for spectacle temples — removes interference with eye glass comfort.

More than 200 Safety Products — Carry This Famous Trademark
WILLSON

WILLSON PRODUCTS, INC., 217 Washington St., Reading, Pa.

If you write maker identify as IEN - 11056

When heavy, unwieldy weldments like these diesel crank cases can be quickly swung into any position so that every weld is downhand — that's efficient welding.

Welders spend more time welding—do better welding at lower cost when they work with C-F Positioners because these hand and/or power operated machines reduce positioning time to a minimum. Investigate the cost saving advantages of C-F Positioners. They pay their way in any company.

Write for Bulletin WP 26 — an illustrated circular detailing the Specific Advantages of C-F Positioners.

CULLEN-FRIESTEDT CO.
1310 S. Kilbourn Chicago 23, Ill.

If you write maker identify as IEN - 11057

CUT COSTS with the *New* MEAD MIDGET AIR CLAMPS

(Spring Return Air Cylinders)

These brand new, tiny Mead Midget Air Clamp Cylinders have only 1" bore. They are made in 3 standard lengths of stroke: 1", 2" and 3"—all with spring return. Like the famous H-1 and V-1 midgets, the new H-1-X models are for use where a little longer stroke is required in a minimum of space. Save countless hours of production time in clamping, locking, releasing, feeding, and in simplified design of work-holding fixtures.

New Industrial Air Power Catalog Ready!

It's full of suggestions for faster, cheaper production! Every plant engineer, production man, purchasing agent needs this Catalog illustrating, describing Air Cylinders, Valves, air-operated Presses, Chucks, Vises, Hammers, Drill Press Feeds, Work Feeders, Timers, semi-automatic combinations, etc. Write!

MEAD SPECIALTIES COMPANY

4114 No. Knox Ave., Dept. EA-104, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 11058

Stainless Maintenance

GIVE YOUR WELDS A LASTING "OK"

A prime requirement of successful maintenance welding is in the selection of the proper Stainless Rod or Electrode. In all respects the deposit of weld metal must offer maximum compatibility to the type and grade of stainless being welded. To assure sound, lasting welds in repair and renovation work, more and more welders are specifying Arcos for two reasons: (1) The wide selection of Stainless Rods and Electrodes assures a *right one* for every job. (2) Arcos quality controls in manufacture guarantee weld metal that is consistently uniform. For more information, write today for "What Electrode Would You Use".

ARCOS CORPORATION, 1500 South 50th Street, Phila. 43, Penna.

ARCOS CORPORATION

1500 South 50th Street, Philadelphia 43, Pa.

If you write maker identify as IEN - 11059

WE CARRY COMPLETE BAR STOCKS

- cold finished carbon
- hot rolled alloy
- cold finished alloy
- stainless

• All our warehouses carry a wide range of types, sizes and grades of steel bars. And you can always count on consistent high quality with the bars we carry. Why not simplify your buying by ordering *all* your bar stock from a single dependable source . . . U. S. Steel Supply?

WRITE FOR FREE BOOKLETS NOW

U. S. Steel Supply Division,
208 So. La Salle St., Chicago 4, Ill.

Please send me, without obligation, descriptive literature on the following types of bars:

☐ carbon C.F. ☐ alloy H.R. ☐ alloy C.F. ☐ stainless

Name.....

Firm.....

Address.....

City.....State.....

U. S. STEEL SUPPLY DIVISION

General Offices 208 So. La Salle St., Chicago 4, Ill.

USS

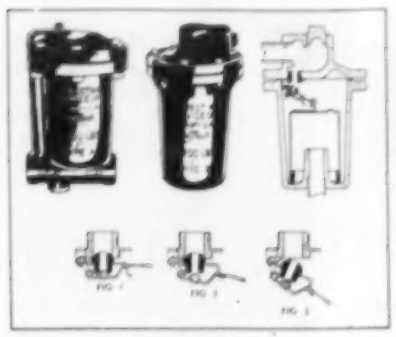
Warehouses and Sales Offices Coast to Coast

UNITED STATES STEEL

If you write maker identify as IEN - 11060

Trap - Inverted bucket design with pilot balanced main orifice valve

Source: PERFECTING SERVICE CO.
332 Atando Ave., Dept. IEN, Charlotte 6, N. C.



Bulletin 800

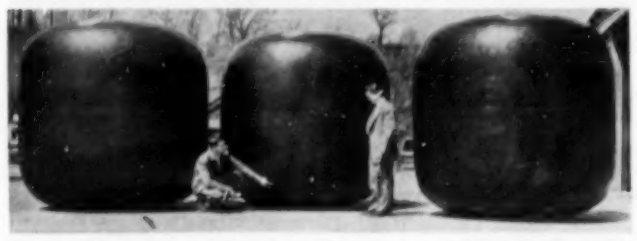
Combined action of the pilot valve and main orifice valve in this new UniTrap makes it possible to employ the trap in steam lines subject to fluctuating load and pressure without need to change the orifice size or make operating adjustments. The trap is rated for pressure to 250 pounds. It is made in a Type A with horizontal inlet and outlet and in a Type B with vertical inlet and vertical or horizontal outlet.

The inverted bucket is suspended from the valve mechanism and holds it open when the trap is empty. The bucket is fitted with a cast iron skirt weight and with an air escape orifice. Condensate and air both flow through on initial filling. Steam, that follows, empties the bucket which floats upward and closes first the pilot and then the main valve. Further accumulation of condensate fills the bucket so it drops and opens first the pilot to balance pressure on both sides of the main valve. Then it opens the main valve for discharge through the main orifice.

The valve mechanism, seat and bucket are made of stainless steel. Four sizes, in Type A, have ½ to 1-in. pipe connections and rate 1,800 to 10,000 lb. per hr. at 250 pounds. Eight sizes, in Type B, have ½ to 2-in. pipe connections and rate 3,000 to 55,000 pounds per hour.

If you write maker identify as IEN - 11061

Granular and powdered materials are handled for shipping in these new 500 and 2,500-gal. synthetic rubber and fabric containers, previously described IEN-1077-54, for United



States Rubber Co., 1230 Sixth Ave., Dept. IEN, New York 20, N. Y. Each is built like a tire with a number of plies of cord fabric and synthetic rubber molded into one piece. Additional plies are used at points of stress. Internal reinforcement is provided by several flexible lifting cables attached to a single lifting ring at the top of the container. Exterior and the interior linings are neoprene. A 6-in. closure is employed in each end for emptying and filling.

The 2,500 gal. unit measures 8 ft. in diameter and stands the same height. Air or gas can be pumped into it to provide additional rigidity during handling operations. It collapses for storage, or return shipment, into a space measuring 8 ft. in length and width by 2 ft. in height. The 500 gal. unit measures 3 ft. 10 in. in diameter and 7 ft. in height when it is filled. It collapses to 6 ft. 4 in. in length, 3 ft. in width and 10 in. in height when empty.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

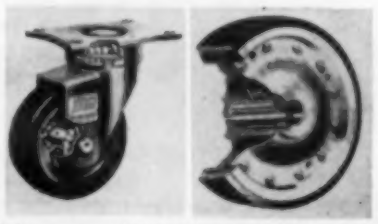
If you write maker identify as IEN - 11062

DARNELL CASTERS & WHEELS

for TOUGHEST DAILY SERVICE

Always SWIVEL and ROLL

Save Money, Time, Floors and Equipment..



STRING GUARDS... Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

RUST-PROOFED... by the Udylite process, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

RUBBER TREADS... a wide choice of treads suited to all types of floors, including Darnellprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

LUBRICATION...

all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water. Zerk fittings are provided for quick grease-gun lubrication.

Free Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 11063

Free 12-PAGE BOOKLET

helps you choose the Right HOOD Glove for Each Job!

This useful Guide shows the comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic-Coated Gloves. It illustrates and fully describes the complete line of Hood Industrial Gloves . . . the choice of industry for every job.

Write for your copy today

HOOD RUBBER CO.

A division of the B. F. Goodrich Company

Watertown, Mass.

If you write maker identify as IEN - 11064

Now

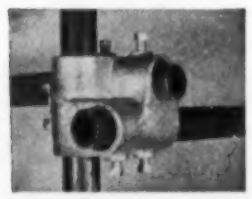
you can build your scaffold not only UP

but

OUT and OVER

for safe and easy access to meet all conditions with **AMIDON FITTINGS** and new or used one inch pipe.

Write for additional information



AMIDON ENGINEERING CO.

ELYRIA 14, OHIO

If you write maker identify as IEN - 11065

NEW...VALVE DATA

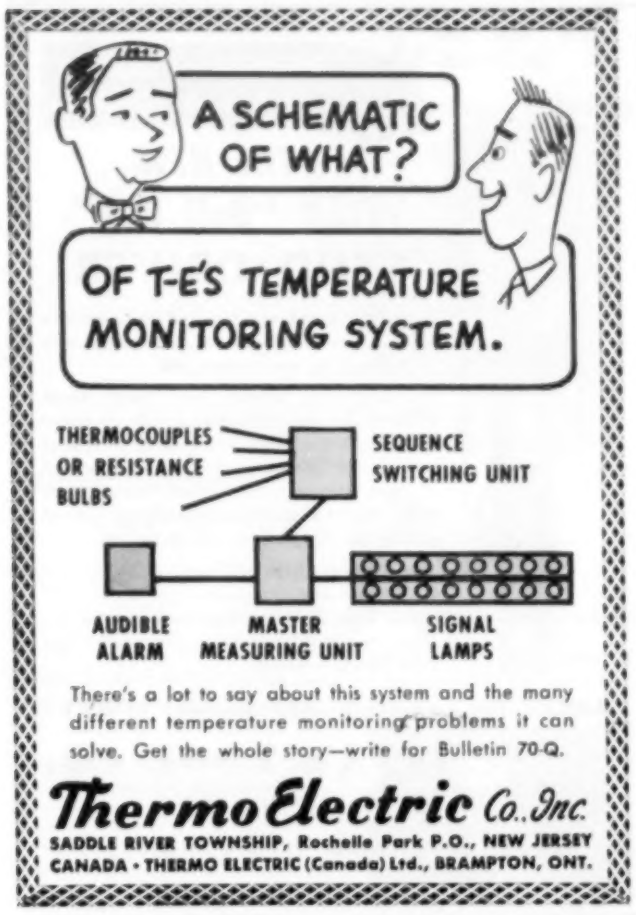
Complete facts about simpler, more dependable Eclipse Solenoid Valves

For design engineers and maintenance men interested in *trouble-free* automatic control of air, oil, water, Freon, and all fuel gases. Simplified design gives you fast, positive shutoff, and dependable performance. Simple to install. Easy to inspect and service without breaking line connections. For pressures up to 150 psi. Write for new Catalog, M-500.

Eclipse Fuel Engineering Co., 1134 Buchanan Street, Rockford, Ill.
Eclipse Fuel Engineering of Canada, Ltd., Toronto, Ontario

Eclipse SOLENOID VALVES

If you write maker identify as IEN - 11066



If you write maker identify as IEN - 11067

tough, flexible CaPlugs insure dirt-free arrival of Alemite Accumeter Valves

Furnished as a key component of an Alemite Accumeter Centralized System for machine lubrication, this tiny, accurate valve must be kept dirt and grit-free during shipment . . . *and it is!* Easily-applied Tapered CaPlugs seal all three openings.

Says Stewart-Warner Corp., manufacturer of Alemite Systems, "All of our equipment that is tested on the assembly line is capped or plugged with CaPlugs. . . . They also help impress the customer with the steps that have been taken to protect the equipment and convince him of the continuing need for protecting lubricants against contamination."

Molded of tough, flexible Polyethylene, CaPlugs are impervious to all common chemical reagents, acids and solvents. They will not chip, break or shred under most severe conditions.

Furnished in five standardized designs, CaPlugs are stocked in over 100 sizes to meet most requirements. Write for catalog, price lists and free CaPlug assortment.

CaPlugs
DIVISION
PROTECTIVE CLOSURES CO., INC.
2203-5 ELMWOOD AVE. BUFFALO 23, N. Y.

If you write maker identify as IEN - 11069

Printing - Sensitized paper plate to make original for off-set printing

Source: OZALID DIVISION
20 Ansco Road, Dept. IEN, Johnson City, N. Y.

Takes 90 seconds

The company announces development of a new sensitized paper plate to supplement its previously developed sensitized aluminum to make positive plates for use in an off-set printing machine. The new paper or the aluminum is fed with a translucent original through an Ozalid machine or other exposing medium. It is developed and fixed and the plate is ready for use in a small off-set press.

Sizes range from 8½ by 12 in. to 10 by 16 inches. A package of 25 plate lists at $6.50 to $8. Solutions are $1.50 per pint for the developer and $1 per pint for the fixer.

If you write maker identify as IEN - 11070

Fastening - Lock nut has hardened teeth on contact face

Source: JACOBSON MFG. COMPANY
11 Newark Ave., Dept. IEN, Kenilworth 10, N. J.

Sample on request

Serrated hardened teeth, on the face of this new nut, provide positive locking action when the nut has been tightened down into place. The design is intended to combine a nut and lockwasher in one integral part. Any machine screw size can be specified in quantity production.

If you write maker identify as IEN - 11071

Handling - Steel sling hook, sizes for ⅜ to 1⅛ in. load chain

Source: S. G. TAYLOR CHAIN CO.
Box 509, Dept. IEN, Hammond, Ind.

Bulletin 90

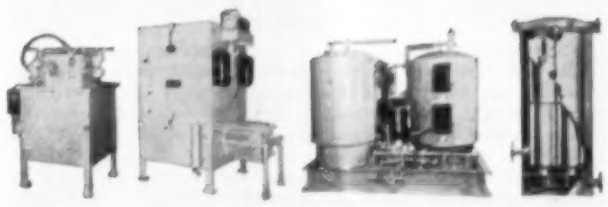
A shackle pin or a wire rope thimble applies in the eye of this new alloy steel sling hook to apply the hook on a chain or a wire rope. The hook is designed for resistance to shock and to stand up satisfactorily in general heavy duty service. Strength is provided by the I-beam type design. Seven sizes are included in the line. The hook is a companion unit to the grab design previously described IEN-3728-53.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11072

HILCO LUBRICATING AND INDUSTRIAL OIL MAINTENANCE EQUIPMENT

Saves You MONEY, OIL and MACHINERY



A COMPLETE LINE OF EQUIPMENT FOR RECLAIMING, FILTERING, PURIFYING AND RE-REFINING OIL.

★ Hilco units are available for continuous or batch operation. You can keep your lubricating and industrial oils clean and recover large quantities of oil at low cost.

Whenever Oil is used it becomes contaminated—must be discarded or conditioned for further use.

There is a HILCO to do This Job for You
Cleans Oil, Reduces Down Time, Increases Production!

★ Tell Us About Equipment You Are Operating and We Will Forward FREE Literature and Recommendations.

OIL PURIFIER DIVISION
THE HILLIARD CORPORATION
35 W. 4th ST. • ELMIRA, N. Y.
IN CANADA — Upton-Bradeen-James, Ltd.
890 Yonge St., Toronto, 3464 Park Ave., Montreal

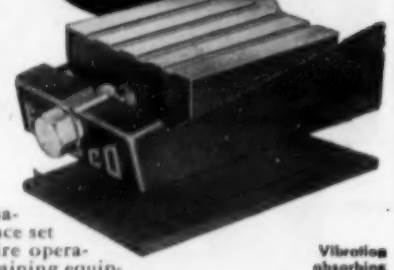
If you write maker identify as IEN - 11073

If you write maker identify as IEN - 11074

Here's how to SAVE TIME in SETTING-UP and KEEPING your MACHINES LEVEL

Fast Accurate Self-Aligning Machine Leveler

Empco JACK



Empco Jacks enable you to meet hurry-up demands for relocation of machinery by giving you the fastest, easiest, most accurate machine leveling ever known: you simply raise or tilt machine sufficiently to allow the Empco Jacks to be slipped under base. The number of jacks required depends on weight of machine and size of base. Once set on Empco Jacks, the entire operation of leveling and maintaining equipment level is quickly done. By applying a wrench to the "hex" head of adjusting screw, an adjustment is obtained either up or down until your level indicator reads "zero." Write for specifications and prices today.

Vibration absorbing mounting pads increase machinery life.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN - 11075

OUT OF AN IBM BUSINESS MACHINE POPS THIS TUBING IDEA FOR YOU

This is the contact roll of an IBM Collator—which performs electronic sleight-of-hand with 240 punched cards per minute! Steel fingers that sort the cards give the roll a high-speed workout. And it must resist corrosion and be a good electrical conductor. IBM employs Superior WELDRAWN* Beryllium Copper and low carbon steel composite tubing for the roll because it meets tight specifications for wear resistance, peak hardness and conductivity. Chances are this tubing—or one of our more than 55 other analyses—will meet *your* requirements for equally critical applications. Send for free Technical Bulletin #7-2 and tell us about your tubing needs.

*Reg. U.S. Pat. Off.

All analyses .010" to ⅝" O.D.
Certain analyses in light walls up to 2½" O.D.

SUPERIOR TUBE COMPANY
2016 Germantown Ave., Norristown, Pa.

Superior Tube
THE BIG NAME IN SMALL TUBING

If you write maker identify as IEN - 11076

TROUBLE MAKER!

Tiny dust particles can cause trouble out of all proportion to their size . . . they create hazardous fire and explosion conditions; they clog and cause excessive wear to valuable machinery; they create unfavorable working conditions and often render the best laid community relations campaigns ineffective.

Effective dust control can eliminate all of these troublesome conditions. To get the facts on how you can determine the scope of your dust problem and the most efficient equipment for effective control, write for our new manual, "A Simplified Test Method for Dust Control Determination."

For your copy, just clip this ad to your company letterhead and sign your name and title.

dustex CORP.
1764 Walden Avenue
Buffalo 25, N. Y.

If you write maker identify as IEN - 11077

New! Atkomatic SOLENOID Stainless Steel Direct Lift Valve to 5000 P.S.I.

Rugged, simple, compact, heavy-duty, two way valve for broad industrial applications. Assures continuous service, nothing to wear out, has only two moving parts. Instantaneous action.

Features higher pressures, greater corrosion resistance. ⅛ and ¼ inch pipe sizes, orifices 1/16 to 3/16 inch diameter. Bodies are 303 Stainless, Solenoid armature is 416 Stainless.

Pressures: 5000 P.S.I. to 150° F. maximum, 2500 P.S.I. to 475° F. maximum. Paper insulated coils up to 180° F., glass insulated, silicone impregnated up to 475° F.

Write for Bulletin No. 100

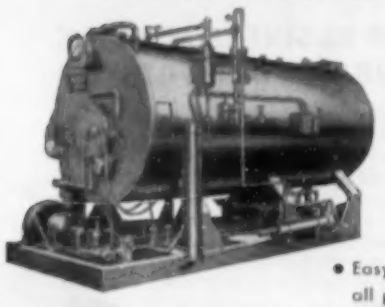
ATKOMATIC VALVE COMPANY
545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN - 11078

"Easy to install . . . Easy to operate . . . Easy on the fuel!"

AMESTEAM GENERATOR

- A complete unit, piped and wired, ready for service connections.
- Needs no special foundation or expensive stack.
- Fully automatic . . attention-free.
- 80% efficiency means real fuel savings.
- Easy to clean and service . . . all parts accessible.



20 SIZES — 10 to 600 h.p. — 15 to 200# OIL OR GAS

FREE BULLETIN! WRITE FOR YOUR COPY

Complete engineering facts on the exact AMESTEAM GENERATOR to do your job and save you money. Write today!

AMES IRON WORKS
BOX E-104, OSWEGO, N. Y.

If you write maker identify as IEN - 11079

Grinding - Dresser attachment forms wheel to a master template

Source: TRACAFORM CORPORATION
22703 Schoenherr Rd., Dept. IEN, East Detroit, Mich.

Patent pending

The problem of accurate contour dressing for a grinding wheel is simplified by application of this new Tracaform diamond dresser attachment. The unit mounts on the table of a grinding machine and employs a 1 to 1 ratio outline template of the wheel form that is to be dressed.

The operator holds the hinged unit so the tracer head is in contact with the template and the diamond dresser is in position at the wheel. He follows the template outline to reproduce it on the wheel. The reproduction is exact since the tracer finger and the diamond are shaped exactly the same.

The template is located where it is in full view. Two designs are available, one for a production set-up and one for use in a tool room. The production Model T-678 is shown in the illustration. List price is $375.

If you write maker identify as IEN - 11080

Meter - Electronic instrument reads voltage at 20 cps. to 2 mcs.

Source: BECKMAN INSTRUMENTS INC.
Box 296, Dept. IEN, Richmond, Calif.

A Shasta design

Model 202 is a new ac. vacuum tube voltmeter with full scale ranges in 12 steps from 0.001 to 300 volts. The instrument applies in a frequency range between 20 cps. and 2 mcs. Its input impedance of 10 megohms is shunted by 15 mmf. or 4 mmf. on the lower ranges, to minimize errors due to loading of the circuit under test. Accuracy is within 3 per cent to 100 kc. and within 5 per cent to 2 mcs. The illuminated dial is calibrated to read in volts and db. Separate terminals are brought out from the input and output of the amplifier section to permit the use of this section as a separate amplifier with gain of 50 db.

If you write maker identify as IEN - 11081

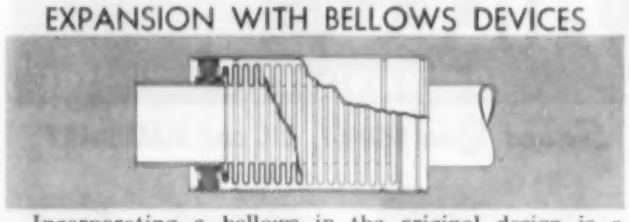
Aluminum plates, to convert a bench vise into one that will hold wood or finished metal parts without marring the surface, are available from Robbins Mfg. Co., 1240 So. Prairie Ave., Dept. IEN-44, Hawthorne, Calif. The plates are held in place on the vise jaws by spring clamps. The gripping surfaces can be kept smooth by dressing them with ordinary sandpaper. Four lengths range from 2½ to 4 inches. List price is about $2 per set.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11082

A PAID NEWS ADVERTISEMENT BY CLIFFORD MANUFACTURING CO.

HOW TO PROVIDE FOR THERMAL EXPANSION WITH BELLOWS DEVICES



Incorporating a bellows in the original design is a simple, effective way to provide compensation for thermal expansion in many types of applications. In addition, since they are leakproof and flexible, bellows permit a certain degree of misalignment to be tolerated without difficulty.

Baseboard radiation systems, for example, employ bellows expansion joints to absorb expansion and contraction of piping with the heating cycle, eliminating noisy operation.

A jet engine manifold has been developed using a stainless steel bellows to solve a high temperature problem and allow easy assembly of flare fittings without need for precise alignment. This can lead to important savings in assembly time.

Hermetically sealed aircraft transformers use a bellows chamber to absorb expansion and contraction of the oil fill with temperature.

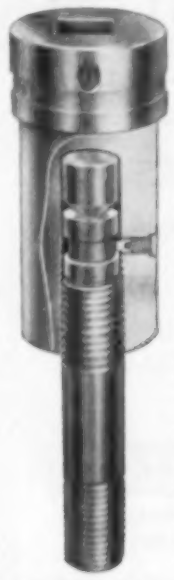
Flexible connectors and flexible piping are used in high temperature fluid systems to allow for thermal changes and mechanical displacement. Aircraft use them to provide hot air de-icing duct movement necessary when wing flexing takes place.

Clifford will gladly work with you on your problems. Simply sketch controlling dimensions and specify service conditions. We will help you arrive at a proper design and produce in quantity to your needs. Write: Clifford Manufacturing Company, 146 Grove Street, Waltham 54, Mass. *Division of Standard-Thomson Corporation.* Offices in New York, Detroit, Chicago, Los Angeles and Waltham, Mass.

7.4.47

If you write maker identify as IEN - 11083

Designed for use with Impact Wrenches



THE NEW TITAN "Bull Dog" STUD DRIVER

Built for rugged use required in locomotive shops, plants building heavy equipment such as engines, air compressors, etc.

Equipped with special Titan Design Loose Pressure Plunger. Definitely stands up under vibration encountered when using an impact wrench for motive power. Loose Pressure Plunger affords much easier release from stud after it is driven and tends to prevent pulling the stud back out of the casting.

Accommodates stud diameters from ¼" to 3". Female driving squares from ½" to 1½". Morse Taper and Hex Slip Chucks can be furnished to adapt the tool to motive power other than impact wrenches.

WRITE for complete information, TODAY!

TITAN TOOLS

TITAN TOOL CO.
Production Tools
52 MAIN ST., FAIRVIEW (ERIE COUNTY), PA.

If you write maker identify as IEN - 11084

A LOADED 5-YD. TRUCK IN 30 SECONDS!

BROS SERIES "A" *Sno-Flyr*

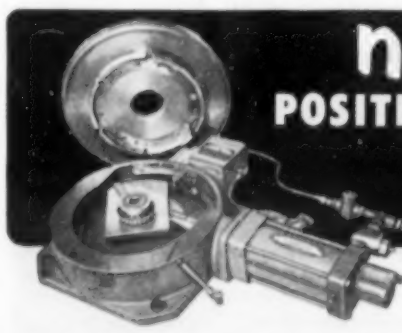
ROTARY SNOW PLOW ON TRACTOR OR JEEP DOES WORK OF 100 HAND SHOVELERS!

● In actual operation, 5-yd. dump trucks can be loaded in just 30 seconds compared with 5 to 10 minutes for hydraulic front-end bucket loaders. Also, does work of 100 hand shovelers based on 8 consistent shovel loads per man, per minute.

The "A" Series Rotary mounts easily to most front-end loaders on your present wheel-type tractors, using same pins as loader bucket. (Also available to fit 4-wheel drive Jeeps.) Slit-spiral rotor-rake chews up wet, heavy, "chunky" snow with ease . . . handles 3 to 4 tons a minute. Plow raises like loader bucket to get at drifts up to 8 ft. Casting chute rotates 180°. Offered in 3 plowing widths — 4' 4", 5' 6" and 6' 6". "Finger-joint" chute capper or long chute for truck loading available. Write today for Series "A" Bulletin.

WM. BROS BOILER & MFG. COMPANY
Road Machinery Division
1147 Tenth Avenue S. E., Minneapolis 14, Minnesota

If you write maker identify as IEN - 11085



now! POSITIVE INDEX EVERY TIME

View of Model 1405 with table removed

AIR-HYDRAULICS Heavy Duty Air Index Tables allow no backlash, skips or overruns because: both the cushioned stop and air speed are adjustable to compensate for variations in load weights and diameters • The index pin shifts to the next notch while table is stationary and is **only** disengaged by the locking dog **after** indexing • The locking cylinder insures firm seating of dog in ring notch • Air cushioned stop eliminates wracking jar

5 versatile sizes from 10" to 48" in diameter (Model 1405—15" dia. shown) • 4, 6, 8 or 12 station rings are standard, others up to 30 stations made to order • May be mounted vertically or horizontally on all types of presses or other tools requiring indexing • Operate on standard line pressures from 60-175 lbs.

Write today for new 14-page catalog covering presses, hammers, index tables and allied equipment.

AIR-HYDRAULICS INCORPORATED
218 BELDEN ST. • JACKSON, MICHIGAN

If you write maker identify as IEN - 11086

THIS number

brings you THIS 42-page catalog

telling you how to get up to 6 to 1

savings on ball bearings

Millions of dollars are wasted because an important principle of bearing design is ignored. This catalog describes the principle and shows you how to save up to 85% on many bearing purchases. Write for it today.

The oldest, largest manufacturer of "Commercial" Ball Bearings

SCHATZ Commercial BALL BEARINGS

THE SCHATZ MFG. CO. • 6750 Fairview Ave., Poughkeepsie, N. Y.

If you write maker identify as IEN - 11087

PRICES SLASHED

UP TO 40% ON

New LABELON

PRINTED FLATBACK TAPE

TRUE WHITE

PRECISION PRINTED

SELF-STICKING • ADHERES TIGHTLY

STRIPS OFF CLEANLY

LABELON Printed FLATBACK

The new, low-cost tape for

- SEALING
- HOLDING
- BUNDLING
- MASKING
- INSTRUCTING
- IDENTIFYING
- WARNING
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Choice of Widths, Lengths, Message

LABELON'S new printed, pressure-sensitive Flatback Tape looks better, sticks better, and COSTS UP TO 40% LESS! Cleaner TRUE WHITE surface. Can be written on with pen or pencil. Wide variety of widths and roll lengths, with your message, design, trademark, symbol, etc. printed in choice of colors.

Write today for prices and FREE SAMPLES

Dept. IEN-10

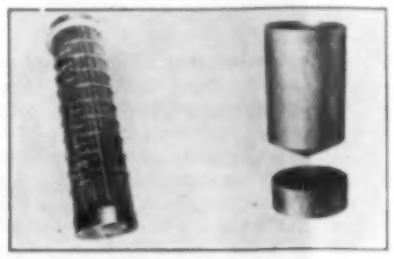
LABELON TAPE CO., Inc.

450 Atlantic Ave., Rochester 9, N.Y.

If you write maker identify as IEN - 11089

Processing - Graphite parts for process equipment construction

Source: GRAPHITE SPECIALTIES CORP.
64th St. & Pine Ave., Dept. IEN, Niagara Falls, N. Y.



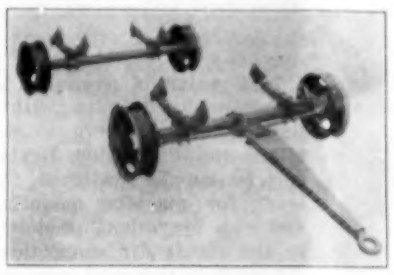
Bulletin GS-101

Various shapes and sizes are available, to 2 ft. in diameter and 9 ft. in length, in the new material Graph-I-Tite. It is a carbon impregnated graphite in which the carbon is used to fill the pores in the graphite to produce a finished product that will withstand attack by corrosive materials, that is not wetted by molten metal or salts. It is suited for operating temperatures to 5,700 deg. F.

If you write maker identify as IEN - 11090

Undercarriage - Axle assembly for four wheel equipment mounting

Source: UNITED MFG. COMPANY
11 W. Interstate St., Dept. IEN, Bedford, Ohio



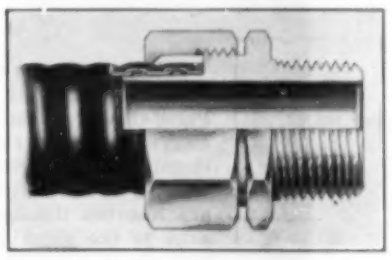
For heavy equipment

Loads to 7,700 lb. can be carried on each of the two axles in this new four-wheel undercarriage assembly. It employs 4-in. heavy wall seamless steel tubing, 2½-in. springs saddle mounted, and 15 by 3½-in. Warner electric or mechanical brakes. A 17-in. overhang gives a 35-deg. turning angle to the unit.

If you write maker identify as IEN - 11091

Conduit - Connector fitting for sheathed liquid tight conduit

Source: PYLE-NATIONAL COMPANY
1334 N. Kostner Ave., Dept. IEN, Chicago 51, Ill.



Pulls tight with union nut

Series CT is a new threaded connector available in straight, 45 and 90-deg. types for ⅜ to 2-in. liquid tight flexible conduit. It meets UL and JIC standards. It has been designed particularly for use on the company's Sealtight conduit or equivalent.

The fitting makes a plastic to plastic connection with the conduit sheath. It grips back of the end of the flexible conduit.

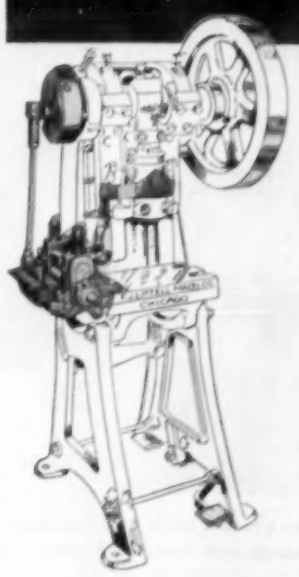
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11092

Automation in Action . . .

LITTELL Style "M" ROLL FEED

Makes Any Punch Press Fully Automatic— and 3 Ways Better



- **FASTER** . . . 9,000 stampings an hour at 200 strokes per minute, or 4500 stampings an hour at 100 strokes per minute are easy production rates on any press with Style "M" Roll Feed.
- **SAFER** . . . Automatic feeding with Style "M" Roll Feed keeps hands and fingers safe from costly accidents.
- **LOWER IN COST** . . . Faster, automatic production from low cost coil stock cuts cost per stamping. Greater safety gives your presses the lowest insurance rate.

The Style "M" Roll Feed is quickly and easily installed on any standard punch press. Several models are available—the largest feeds coil stock up to 8" wide and .055" thick. All models feed left to right, right to left or front to back. Feed direction is reversed by reversing the clutch. On large models, feed length per stroke is from 0 to 4⅜" with standard gears, and from 0 to 8½" with compound gears. Feeding rolls are hardened and ground for long service life. Style "M" puts automation in your press room at lowest possible cost.

Write for the Littell Roll Feed Catalog

F. J. LITTELL MACHINE CO.

Speed with Safety

ROLL FEEDS • DIAL FEEDS
STRAIGHTENING MACHINES
REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland

4133 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

If you write maker identify as IEN - 11093

BARBER COLMAN **Wheelco Flame-otrol**

Offers complete choice of combustion safeguard systems

RECOMMENDED BY SAFETY ENGINEERS

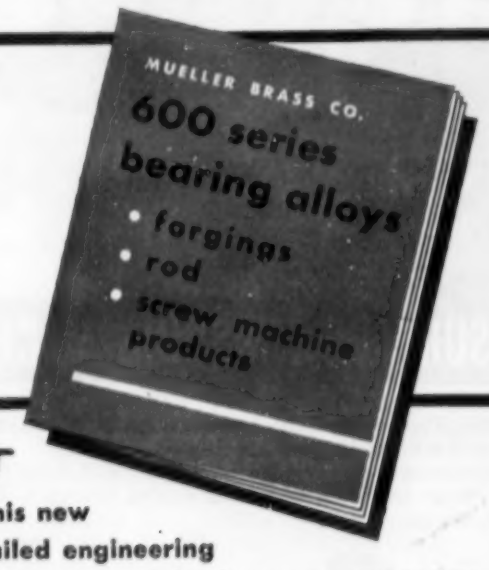
There's safety in numbers . . . that's why Wheelco offers *all* conventional combustion safeguard systems for best performance on a variety of heating operations. Regardless of job limitations . . . multiple-burner arrangements, background light, ambient temperature changes, etc. . . . there's a Wheelco system that assures faster, surer shut-off. Result—you get added flexibility in selection and use of burners, pilots, and fuels — maximum protection against nuisance shutdowns. Let your Wheelco engineer recommend a complete Flame-otrol system, engineered for best performance on your gas- or oil-fired boilers, furnaces, and kilns. Write for Bulletin F2-3.

WHEELCO INSTRUMENTS DIVISION

BARBER-COLMAN COMPANY, Dept. J, 1516 Rock St., Rockford, Ill.
BARBER-COLMAN OF CANADA, LTD., Toronto, Ontario, Canada

If you write maker identify as IEN - 11094

get all the facts about MUELLER BRASS CO. 600 series bearing alloys



in this new detailed engineering handbook . . . write for your copy today

MUELLER BRASS CO., PORT HURON 26, MICH.

132

If you write maker identify as IEN - 11095

Lightweight **FIREBRICK CUT OUR FUEL COSTS 26%**

And that's not all! This user, who relined his annealing furnace with B&W *lightweight* Insulating Firebrick practically doubled his furnace output.

What's the story behind the remarkable performance of B&W IFB?

Lightweight B&W IFB mean that you have millions of tiny, insulating air cells in your furnace walls—keeping the heat inside your furnace where it can work for you. And because B&W IFB store and conduct less heat, they reduce heating up time and respond quickly to temperature changes, assuring excellent temperature control.

Get all the facts from your B&W Refractories Engineer. Offices in principal cities.

THE BABCOCK & WILCOX CO.

Refractories Division

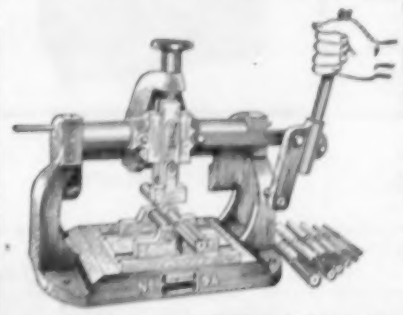
General Offices: 161 East 42nd St., New York 17, N. Y.

Works: Augusta, Ga.

R-609

If you write maker identify as IEN-11096

WHY WAIT FOR BIG MARKING MACHINES



WHEN THESE HANDY BENCH MODELS WILL DO YOUR WORK — CARRIED IN STOCK

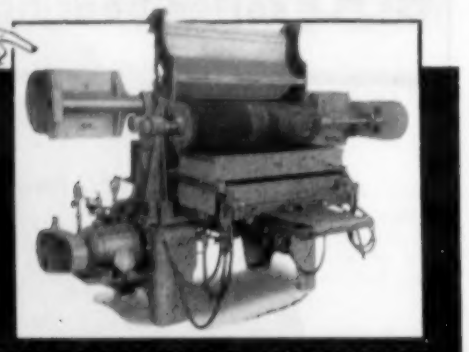
A full line of Hand and Power Driven Marking, Numbering, Stamping and Printing Machines —always available for prompt delivery.

ACROMARK

THE ACROMARK COMPANY
7 MORRELL ST., ELIZABETH, NEW JERSEY

If you write maker identify as IEN-11097

Here's the answer to your
SURFACE FINISHING PROBLEMS!
★ FROM ROUGH GLAZE TO MIRROR FINISH



CLAIR Model 206-A

SURFACE FINISHING MACHINE

Developed for surface finishing small hand tools, machine is equipped for mechanical holding or magnetic chuck, operated by an electro-hydraulic system.

Spindle of single roll will accommodate buffs from 3" to 12" in dia. Work area with mechanical holding fixtures is 38" x 24"; with magnetic chuck, 38" x 14".

Write for Bulletin 206

CLAIR
MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

If you write maker identify as IEN-11098

Abart SPEED REDUCERS

case hardened and ground alloy steel WORM INTEGRAL WITH SHAFT

. . . another characteristic contributing to ABART QUALITY

Long-lasting, efficient, economical performance is built into all Abart units. Proven dependability...on numerous applications for thirty years . . . makes Abart the favorite of design and maintenance engineers.

Over 75 types and sizes (spur, worm, and combination)—ratings from 1/50 to 168 hp. with ratios up to 10,000 to 1—to meet your requirements. Specials to order.

Send for free, pocket-size catalog covering Abart's complete line of Speed Reducers and Gears.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS

If you write maker identify as IEN-11099

Signaling - Revolving light produces 100 bright flashes per minute

Source: FEDERAL SIGN & SIGNAL CORP.
8700 S. State St., Dept. IEN, Chicago 19, Ill.

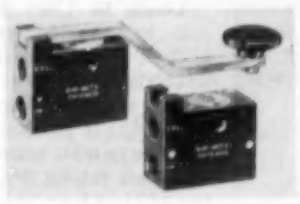
About $65

Beacon Ray 27-S employs an electric light beam revolving horizontally through a complete circle to produce 100 bright flashes per minute. The light is designed to indicate hazardous areas and as a visual means for communication in noisy shops and over long distances. The unit is suited for use in steel mills, foundries, machine shops, industrial plants in general. It serves as a crossing warning light for in-plant railroad installations. Operation is on 110-volt ac.

If you write maker identify as IEN-11100

Valve - Three way pneumatic for cylinder operation, poppet design

Source: AIR-MITE DEVICES INC.
4417 W. Carroll Ave., Dept. IEN, Chicago 24, Ill.



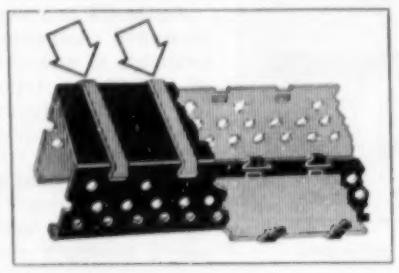
Ports are ⅜ inch

New valve is available in normally closed design, with a hand lever as shown to the left in the illustration. It also can be supplied without the lever for machine mounting and cam operation, as shown to the right. Air connections are made to threaded openings at one end of the housing. The body is drilled for vertical or horizontal installation. Internal parts are made of brass or aluminum. The poppet air seal is Hy-Car composition. Overall dimensions are 2½ by 1¼ by 2⅝ inches. The handle measures 7½ in. in length.

If you write maker identify as IEN-11101

Electric Duct - Plastic clips hold walls and covers in panel wiring

Source: STAHLIN BROTHERS FIBRE WORKS
519 Maple St., Dept. IEN, Belding, Mich.



Catalog on request

Plastic clips have been added to the Panel-Chanel plastic wiring duct, previously described IEN-1225-54. The new clips are inserted through slots in the sides of the duct and the covers are press fitted to the clips. The clips then act as hinges and also as locks to secure the cover to the sides and contain the wiring.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11102

RIVETT

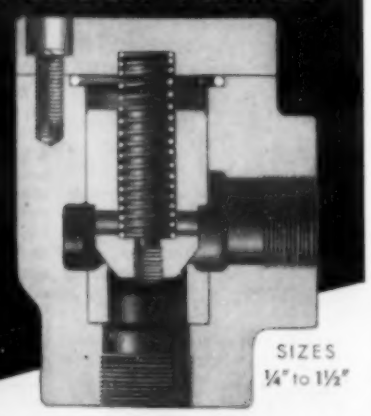
Hydraulic check valves

PIPE THREAD OR FLANGE CONNECTED

SPRING CLOSED OR PILOT OPERATED

MOUNTED IN ANY POSITION

3000 P. S. I.



SIZES ¼" to 1½"

Model 8640, Spring Closed • Model 8642, Pilot Operated
Model 8644, Pilot Operated with Pressure Breaker

Allow free flow in one direction, but prevent flow in opposite direction. Large areas through valve permit unusually large volume. Ex: 1½" valve has 104.2 G.P.M. capacity at 15 ft. per sec.

Call Your Local Rivett Dealer Or Write Direct

RIVETT LATHE & GRINDER, Inc., Dept. IEN-10, Brighton 35, Boston, Mass.
Rivett Furnishes A Complete Power Package

If you write maker identify as IEN-11103

Complete Stocks of **PLYWOOD**
AS CLOSE AS YOUR TELEPHONE!

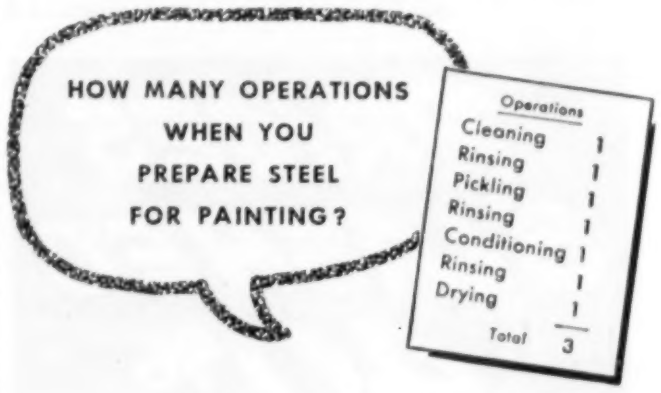
ARmitage 6-7100

AETNA carries *complete* stocks of plywood from mills all over the world. Out of this wide range of stock AETNA can furnish plywood for any industrial or decorative use.

AETNA gives the widest possible choice: Hardwood plywood for manufacturers to give distinctive elegance to products . . . wall paneling for offices and special furniture . . . plastic surfaced plywood for table tops and counters. All standard sizes and many odd sizes, full range of grades, uniform high quality stock, fast delivery.

AETNA PLYWOOD & VENEER CO.
HEADQUARTERS FOR A WORLD OF PLYWOOD
1724 N. Elston Avenue, Chicago 22, Illinois
BRANCH WAREHOUSES:
Detroit, Grand Rapids, Indianapolis, Peoria, Rockford

If you write maker identify as IEN-11104



What's wrong with that addition? How can seven operations add up to three?

It's easy when Oakite Composition No. 33 removes rust or heat scale *at the same time* it removes oil *at the same time* it prepares steel for lasting paint adhesion.

By combining cleaning, pickling and paint conditioning into one operation—and eliminating two rinses—you save the time, tanks and solution for four operations.

FREE For booklet describing the Oakite Composition No. 33 process, write to Oakite Products, Inc., 16A Rector Street, New York 6, N. Y.

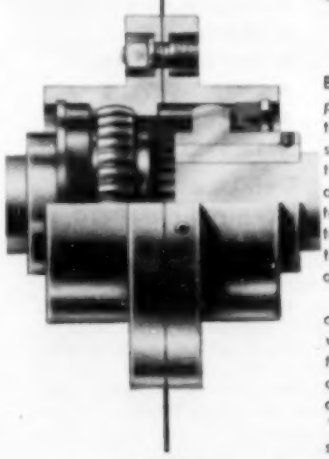
SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN-11105

NOW A BETTER COUPLING

SPHEREFLEX



Send for new Catalog C-540.

Better, because it utilizes a *new principal of design*: the gear teeth are precision cut on a true spherical arc . . . and because the root of the gear teeth are also curved, there can be no interference between mating gear teeth, even when shaft deflections range up to 7° total misalignment.

The "Sphereflex" is a *stronger coupling*, because there is *always a full line of contact between mating teeth*, whether coupling is flexed or perfectly aligned. Size for size, the "Sphereflex" Coupling will withstand more deflection, greater torque, higher rotating speeds, and more sever shock-loading than comparable couplings. And remember, they cost no more than other good quality couplings.

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as IEN - 11106

CLEANS METAL PARTS
BETTER • FASTER • CHEAPER

NEW LOW COST BENCH MODEL **JET BLAST**

BENCH MODEL JET BLAST
Other sizes are available

DISTRIBUTORS: A few territories are still open.

SAVES UP TO 60% IN LABOR COSTS

JET BLAST REMOVES Rust, scale and Foreign Deposits from Dies, Molds, Tools or other precision articles without dimensional alterations. Increases adherance and bonding qualities of paint, porcelain, rubber, electroplated metals and a host of other materials . . . Equally effective for cleaning threads for close, smooth fit.

JET BLAST will give any desired finish on flat or irregularly shaped objects . . . Sharp edges are retained.

JET BLAST is excellent for light burring on hard to-get-at surfaces.

JET BLAST materially increases tool life when used for honing cutting faces after grinding . . . Eliminates costly hand labor.

JET BLAST IS A TOOL ROOM NECESSITY

SEND FOR BULLETIN

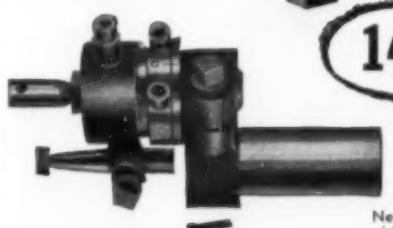
R·W·RENTON and Company
877 ADDISON ROAD • CLEVELAND 3, OHIO

If you write maker identify as IEN - 11107

MORE PRODUCTION . . .
. . GREATER ACCURACY . .
. . . . . LOWER COSTS!
With
R AND L TOOLS

TURNING TOOL
Changes from right to left in ten seconds . . . Replaces an assortment of fourteen separate tools. It can be used for rough as well as finished cuts, meeting the most difficult job requirements.

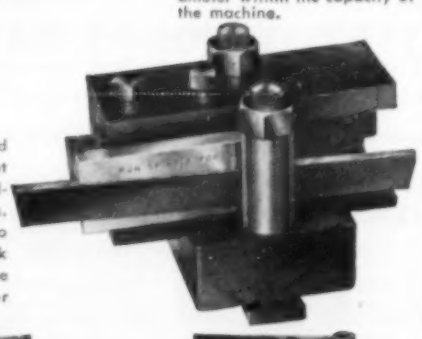
14 TOOLS IN 1



RECESSING TOOL
Newly designed . . . available in three standard sizes, (5/8", 3/4", and 1" shank.) Adjustable to operate on both internal and outside diameters . . . with spindle running right or left. Each tool can be adjusted to handle any diameter within the capacity of the machine.

IT'S NEW!

UNIVERSAL TOOL POST
Precision manufactured to hold square or flat tools, which can be adjusted in all directions. Can be used close to chuck, on front or back cross-slide with spindle running forward or backward.



CUT OFF BLADE HOLDERS AND CUT OFF BLADES
Specially designed and flawlessly made to fit R and L UNIVERSAL TOOL POST. Holders can be set to cut off work at close to chuck as desired.

RIGHT R AND L LEFT TOOLS

Write for Catalog

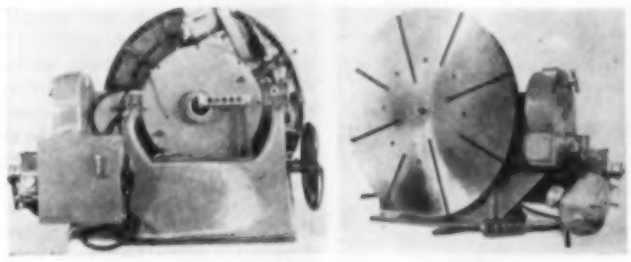
TURNING TOOL • TAP AND DIE HOLDER (Releasing or non-releasing—also furnished for Acorn Dies) • CARBIDE OR ROLLER BACKRESTS • UNIVERSAL TOOL POST • TURRET BACKREST HOLDER • CUT-OFF BLADE HOLDER • RECESSING TOOL • REVOLVING STOCK STOP • FLOATING DRILL HOLDER • KNURLING TOOL

1825 Bristol Street
Philadelphia 40, Pa.

If you write maker identify as IEN - 11109

Indexing - Rotating table designed to position work universally

Source: MACHINE PRODUCTS CORP.
6771 E. McNichols Rd., Dept. IEN, Detroit 12, Mich.



Designed for precision application

Illustrated is new design of the company's Rotab index table in which the table rotates on one axis that in turn is rotated on a second axis at 90 degrees. Four sizes are 12, 24, 36 and 48 in. in diameter. Rotation and tilt are by electric motors with jog push button control in the 36 and 48-in. sizes. Limit switches and safety devices prevent movement while the table is clamped. One-shot equipment provides lubrication to the bearing points.

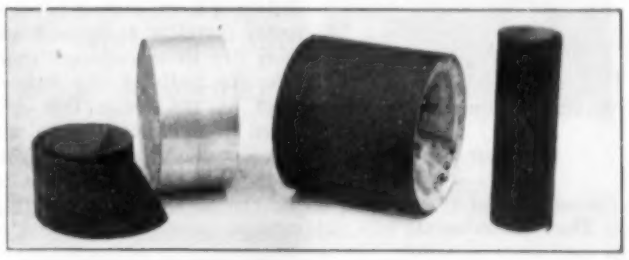
A feature in the construction is an optical micrometer microscope with a glass vernier recticle that permits direct reading, to 5 sec. of arc, on a graduated ring located beneath the table with clockwise and counter-clockwise markings from 0 to 360 degrees. The ring can be rotated to the desired degree setting and then clamped in position to become a fixed part of the table.

The table spindle is mounted on preloaded precision bearings extending beyond the back plate to provide for attachment of a sine bar when the table is in vertical position and thus obtain radial measurements from a shelf by jo-block setting. Rotation can be brought to a stop accurately so that only minor adjustment for precise tilt angle need be made by the jo-blocks.

If you write maker identify as IEN - 11110

Drive - Traprock coated fabric for covering on belt traction pulleys

Source: MINNESOTA MINING & MFG. CO.
900 Fauquier St., Dept. IEN, St. Paul 6, Minn.



To provide good traction

Type E, for use with a separate adhesive to apply on a pulley, and Type F, with an integral self-adhesive backing, are new traprock coated fabrics under the trade name Safety-Walk. Both materials can be spiral wound or applied in sections on the faces of pulleys for traction in a belt drive. The traprock coating applies a mild abrasive action that will not harm a belt or wear out belt lacings. Both materials are available in rolls to 24 in. in width.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11111

where **HEAT** eats metal
paint with **THERMALITE**
and protect up to **1000°**

NEW SILICONE HIGH-HEAT ALUMINUM PAINT FUSES TO METAL . . . PROTECTS AGAINST RUST AND CORROSION

A revolutionary paint development, Thermalite fuses to metal, will not discolor, blister, burn or flake off—even at 1000° heat! Protects against rust, corrosion, chemical fumes. Formulated to stand severe weather exposure as well as high heat.

Ordinary aluminum paints flake off under high heat because the resins burn out. Thermalite's film-forming solids consist of "silicones"—the wonder resin that defies heat, fuses to metal, producing a tough, silver-bright, tightly-adhering coating.

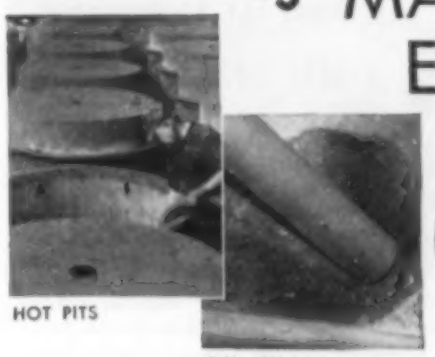
In hundreds of applications industrial users have proved that Thermalite solves their problem of obtaining a paint coating that withstands 400° to 1000° heat. Two types available, one for interior, the other for exterior metal surfaces.

FREE! . . . to industrial paint users. Your letterhead request brings complete information on Thermalite for interior or exterior use. Write today!

THE TROPICAL PAINT AND OIL CO. SINCE 1883
1126-1296 W. 70th Street, Cleveland 2, Ohio

If you write maker identify as IEN - 11112

TEDIOUS JOBS MADE EASIER



HOT PITS
FLY ASH

with SPENCER VACUUM

Tedious—and expensive jobs are eliminated in more than 100 ways with Spencer Vacuum. Hundreds of special vacuum tools have been devised—for vacuum units ranging from 1½ to 100 HP. Smaller sizes for your offices.

You can reclaim materials, remove liquids, vapors, and the finest dusts and speed up your assembly and inspection lines with Spencer Vacuum. Our representative near you has information of value on these subjects.

ASK FOR BULLETIN No. 144

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
466-E

If you write maker identify as IEN - 11113

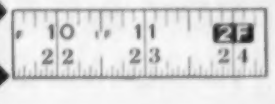
Evans King-Size 10-ft. Steel Tape

STANDS UP STRAIGHT for UPRIGHT MEASUREMENTS

Those long upright measurements are easy and accurate with this new EVANS King-Size 10-ft. White-Tape. The 33% wider blade (full 3/4") stays straight up without bending or buckling. You get a *free* belt clip and Tenite utility case with every tape. Sliding end hook for inside or outside measuring and . . .

it's marked so you don't have to figure! no other tape is marked this Evans way.

This Edge—marked in feet and inches with foot markings at every inch.
This Edge—marked in inches from 1" to 120"



Whichever way you work, in inches or feet and inches, you read *instantly* without having to stop and figure.
The EVANS King-Size White-Tape Is the Top 10-ft. Tape value at only $2.39. Purchase from your supplier.

another EVANS value—
THE ONLY 12-FOOT POCKET WHITE-TAPE
"Standard blade ½" wide"

This L-O-N-G-E-R Pocket White-Tape only $1.89
Purchase from your supplier.

Now, a pocket steel tape that measures a full 12 feet—eliminates the inconvenience and inaccuracy of adding two measurements as you do with shorter tapes. Exclusive EVANS double markings (same as King-Size above). Chrome plated case is *no bigger than cases for shorter tapes.* Self-adjusting sliding hook for 100% accurate inside or outside measurements. Each tape packed in FREE transparent Tenite utility case. **Free Sample Tape Available** **If your distributor does not carry these EVANS Tapes, have your purchasing agent write direct to the factory giving the name of his distributor and requesting a free sample tape. Specify whether 12 ft. L-O-N-G or King Size Tape is wanted.**

Evans & CO.
400 Trumbull Street, Elizabeth, N. J., U. S. A.
Makers of Evans "Long Tapes"—25-50-75-100 ft. and Evans 6-ft. Folding Rules

If you write maker identify as IEN-11115

• This new heavy duty switch, built to NEMA XII specifications, is "tailor-made" for applications requiring protection from dirt, dust, oil and coolant.

Write for Bulletin SD-5. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN-11116

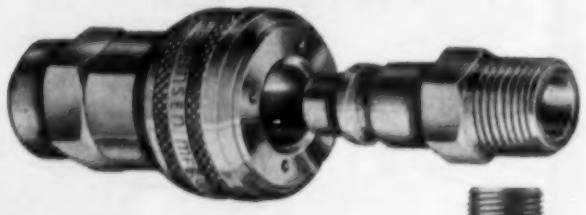
HANSEN

QUICK-CONNECTIVE

PUSH-TITE COUPLING

TRADE MARK

Provides Instant Automatic Flow or Shut-Off



To connect a Hansen Push-Tite Coupling, you merely push the Plug into the Socket with one hand. Flow is instantaneous.

To disconnect, push back sleeve on Socket . . . Coupling disconnects and flow is shut off instantly and automatically. No tools required. When Coupling is connected, Plug is free-swiveling, thus eliminating any possibility of kinks in hose.

Two-way shut-off and straight-through Couplings also available.

WRITE FOR CATALOG

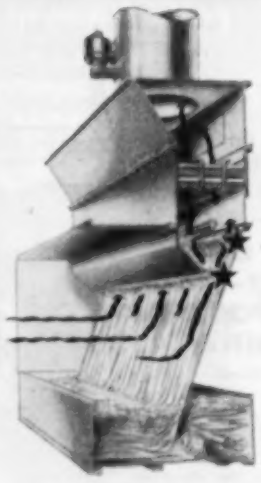
THE HANSEN MANUFACTURING COMPANY

4071 WEST 150th STREET • CLEVELAND 11 OHIO

If you write maker identify as IEN-11117

NEW LOW-COST WATER WASH SPRAY BOOTH

This completely new Binks Style D water wash spray booth will save many dollars for shops interested in lower costs. It costs less to buy, less to operate and less to maintain. A vigorous double washing (see ★★) scrubs overspray from the exhaust air and collects it for reclamation or disposal. Booth and fan stay cleaner longer. The manifold is clog-proof. All parts are easily accessible.



SEND NOW FOR FURTHER INFORMATION

Binks Manufacturing Company

3120-34 West Carroll Avenue, Chicago 12, Ill.

Binks EVERYTHING FOR SPRAY PAINTING

GUNS • COMPRESSORS • EXTRACTORS & ACCESSORIES

REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

If you write maker identify as IEN-11118

Plating - Vacuum metallizer provides 36 in. by 60 in. work chamber

Source: F. J. STOKES MACHINE CO.
5500 Tabor Road, Dept. IEN, Philadelphia 20, Pa.

For moderate production

Model 428 is a new simplified design of the company's previously developed 48-in. Model-426 vacuum metallizing equipment. Certain of the more elaborate automatic features of the larger metallizer have been omitted to bring the machine within the economic reach of firms whose present volume does not justify the larger unit.

Construction includes an integral vacuum pumping installation consisting of oil diffusion pump and rotary mechanical fore-pump to bring the chamber down to metallizing pressure of 0.5 micron in about 10 minutes. A console type control panel centers push buttons, starter, vacuum gages, rheostats and other instruments in one convenient position.

The work rack in the main chamber will take four standard rotating fixtures identical with those used in the larger Stokes machine so these racks can be retained and used in the larger unit in the event that production requirements increase to the point of purchase of a 48-in. or a 72-in. unit.

If you write maker identify as IEN-11119

Cleaning - Vacuum machine blows out dry litter and picks it up

Source: HANDLING DEVICES INC.
43-45 Pearl St., Dept. IEN-126, Brookline 46, Mass.

Operator moves it

New design of the engine driven vacuum cleaning machine, previously described IEN-8468-53, includes two inverted Y-outlets that face diagonally forward from the rear of the machine at about floor level. These outlets carry exhaust air from the machine and deliver it down and out to reach under installed equipment and blow dry litter collected there into the path of the suction head at the front. One trip down a textile mill aisle will bring out lint and fly from under the looms and spinning frames. All of it is picked up on the machine's return trip.

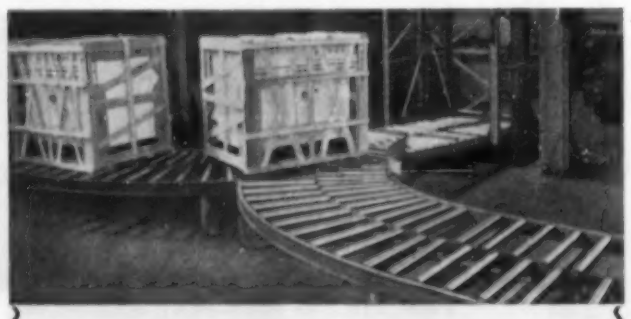
The suction nozzle will pick up dust, powders, dry litter in a path 22 in. in width. Air handling capacity of the blower is 860 cfm. at 3,400 rpm. Suction orifice is 1½ by 22 inches.

If you write maker identify as IEN-11120

Safety goggles, glasses, respirators are sanitized by a new non-irritating, non-toxic liquid concentrate available from Chicago Eye Shield Co., 2300 Warren Blvd., Dept. IEN, Chicago 12, Ill. The liquid mixes with water. It is packaged in 6 oz. bottles. One bottle produces 24 gallons of solution.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11121



Get to the Point WITH FERGUSON CONVEYORS

To get products in your plant to the point of assembly . . . inspection . . . packaging and shipping, use FERGUSON CONVEYORS. They'll bring you to a bigger profit point—by saving steps, by saving man-hours and by increasing department-wide and plant-wide efficiency.

This is not just idle talk. Every day, time and motion studies prove the value of FERGUSON POWER & GRAVITY CONVEYORS. They are used throughout industry because of performance and profits users obtain.

Write, wire or call us today for facts, figures and help with your particular materials handling problem.

HARRY J. Ferguson COMPANY
125 WEST AVENUE
JENKINTOWN, PA. OGONTZ 4401

If you write maker identify as IEN-11122

Companion tools – NOBURSINK for openly accessible hole faces and NOBUROD for outer ends of rods, tubes and bosses – provide greatly improved work quality, faster and easier than ever before. Both have low torque design permitting rapid, off-hand workpiece handling without chatter – even on large diameters. Unique design allows regrinding without special tools.

Eliminate makeshift and less efficient tools

Both NOBURSINK and NOBUROD tools work equally well on all metals. Cutting chips are freely expelled from the work area. Each tool accommodates a wide range of work size – and are furnished 90° included angle (produces 45° chamfer).

WRITE for FULL DETAILS TODAY!!

NO BUR TOOLS NOBUR MANUFACTURING CO.
717 No. Victory Boulevard, Burbank, California

If you write maker identify as IEN-11123

OLD-FASHIONED INDUSTRIAL WIPERS STEALING YOUR PROFITS?

Modernize your shop—save money—with new

Type 1300 KIMWIPES!

You'll be money ahead when you switch to Type 1300 Kimwipes. They're the modern new disposable wipers that actually replace old-fashioned cloth and waste wiping material—and cost four to ten times less!

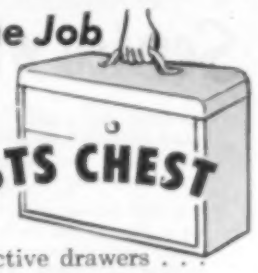
New Kimwipes 1300 are soft. Strong. Absorbent. A full 12" x 18" in size, they hold up to 8 times their own weight in liquids. They're non-abrasive, too. There's no holdover of metal chips or other infectious material that may cause dermatitis and loss of man hours. Type 1300 Kimwipes are absolutely clean to start with, and are disposed of after use. Ask your salesman for samples. And remember, there are two other kinds of Kimwipes you can choose from: Type 900-S (optical wipers) and Type 900-L (regular wipers). Save money. Order today!

Kimberly Clark INDUSTRIAL WIPERS Kimwipes

Kimberly-Clark Corporation • Neenah, Wisconsin

If you write maker identify as IEN - 11125

Tote Your Tools to the Job



with the handy

HUOT MACHINISTS CHEST

MODEL 104. Cork lined protective drawers . . . one turn of the key fastens cover and all drawers with patented lock . . . smooth, streamlined, easy-to-clean . . . holds a full 18" scale. Over-all 19¾" long, 13¾" high, 8¾" deep and weighs only 26 pounds.

MODEL 105. Although non-portable, it's a "king-size" chest for tools up to 24". 9 drawers. Overall size 26¼" x 14¼" x 12¼": Weight 75 pounds.

Ask your distributor, or write for bulletin

By the Makers of HUOT DRILL INDEX

Huot is pronounced "Hew-ot"

HUOT

HUOT MFG. CO.
565 North Wheeler St. St. Paul 4, Minn.

If you write maker identify as IEN - 11126

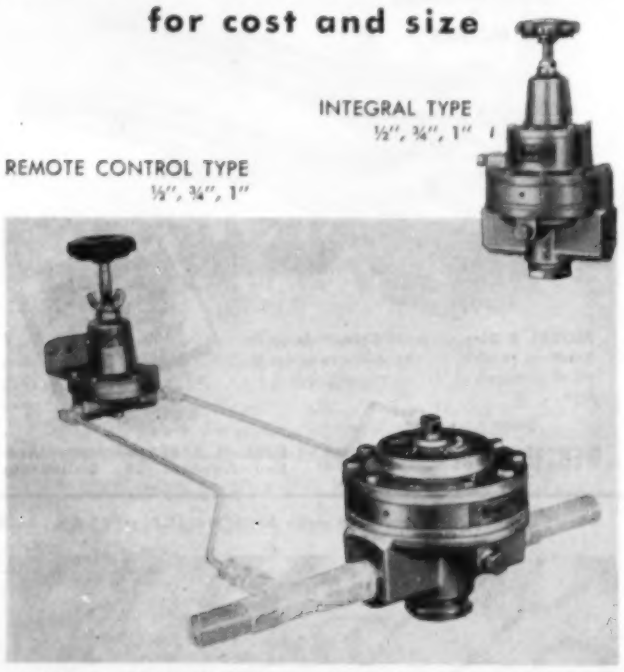
Norgren

PILOT-CONTROLLED PRESSURE REGULATORS

give you greatest performance for cost and size

INTEGRAL TYPE ½", ¾", 1"

REMOTE CONTROL TYPE ½", ¾", 1"



MORE CAPACITY—MORE ACCURACY

Extremely accurate, automatic pressure regulation, with capacities up to 250 cfm (more if needed). Large fluctuation in flow and primary pressure have negligible effect on regulated air pressure. Examples: the secondary pressure remains constant at 30 psi. with an 80 psi. primary pressure and flow varying from 0 to 200 cfm. Secondary pressure remains constant at 30 psi. with flow of 60 cfm. with primary pressure varying from 50 to 120 psi. Essential equipment for higher quality of machine output at a faster rate of production and at lower unit costs.

WRITE FOR COMPLETE DATA

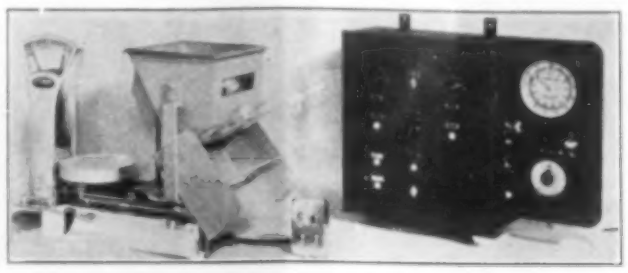
C. A. Norgren CO.
3432 So. Elati, Englewood, Colo.

VALVES • FILTERS
REGULATORS • LUBRICATORS • HOSE ASSEMBLIES

If you write maker identify as IEN - 11128

Packaging - Net weighing machine to handle free flowing commodities

Source: EXACT WEIGHT SCALE CO.
944 W. Fifth Ave., Dept. IEN, Columbus 8, Ohio



To order for specified application

Unit capacity, for delivery by this new counter equipped and timer controlled machine, can be set from a few ounces to 25 pounds. A free flowing commodity is delivered to the weight hopper by means of a vibratory feeder not shown in the illustration. Feed is maintained first at a fast rate and then at a slow rate until the predetermined amount is in the weigh bucket. The bucket then discharges its contents, after a predetermined time interval. A counter records each discharge. It shuts off the action when a pre-set number of loads has been delivered. Push button control is included. The precision scale has a 1 to 1 dynamically balanced lever.

If you write maker identify as IEN - 11129

Filtering - Porous carbon, blocks and sheets to 10 by 10 inches

Source: STACKPOLE CARBON CO.
1942 Tannery St., Dept. IEN, St. Marys, Pa.

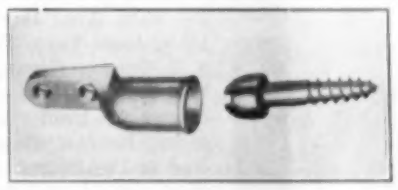
Technical data upon request

The company announces development of a new fine grain porous carbon, containing 75 per cent voids, particularly for use as filter plates. The carbon retains its usual characteristics including electrical conductivity, resistance to chemical attack and stability under high temperatures. It is available to about 10 by 10 in. and in desired thickness to 1½ inches.

If you write maker identify as IEN - 11130

Fastening - Nylon cylinder and metal plunger comprise door latch

Source: LABORATORY EQUIPMENT CORP.
Hilltop & Leco Aves., Dept. IEN, St. Joseph, Mich.



Sample on request

Leco-Lon trade names a new door latch made up of a metal plunger that threads into a door and a nylon cylinder that engages the plunger and holds it when the door is closed. The cylinder is secured to the under side of a shelf or cupboard. The metal plunger is inserted, with its threaded point straight out, and the door is closed against it to mark its location. Then it is threaded into the door.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11131

the most widely used Electronic Supply Guide

free send for it

ALLIED'S COMPLETE 308-PAGE 1955 CATALOG

your guide to the world's largest stocks of ELECTRONIC SUPPLIES FOR INDUSTRY

Simplify and speed *all* your purchasing of electronic supplies and equipment. Send your orders to us for fast shipment from the world's largest stocks of electron tubes (all types), test instruments, audio equipment, electronic parts (transformers, capacitors, controls, etc.). Our expert Industrial supply service saves you time, effort and money. Send today for your FREE 1955 ALLIED Catalog—the *complete* up-to-date guide to the world's largest stocks of quality Electronic supplies for Industrial use.

One complete dependable source for everything in electronics

ALLIED RADIO
100 N. Western Ave., Dept. 14-K-4
Chicago 80, Illinois

If you write maker identify as IEN - 11132

DESIGN

FOR COMPACT SIZE WITH

Engineered to deliver maximum torque — with minimum size — ROCKFORD CLUTCHES provide abundant brawn, without unnecessary bulk. Spring-loaded and over-center, single or double-plate, or multiple-disc types fit compactly into product designs. If your project calls for a drive that *must* fit neatly into limited space, consult ROCKFORD clutch engineers — while your size problem still is on the drawing board.

Send for This Handy Bulletin
Shows typical installations of ROCKFORD CLUTCHES and POWER TAKE-OFFS. Contains diagrams of unique applications. Furnishes capacity tables, dimensions and complete specifications.

B&W

ROCKFORD CLUTCH DIVISION
BORG-WARNER
303 Catherine Street, Rockford, Illinois

ROCKFORD CLUTCHES

If you write maker identify as IEN - 11133

FOR MODERN MATERIALS HANDLING—

ROEBLING TAPERED SLEEVE SLINGS

ECONOMY! FLEXIBILITY! DOUBLE SAFETY! That's what you get with Roebling Slings. They are as strong as the rope. No need to make allowances for the inefficiency of splices.

What's more, these slings are remarkably easy to handle. There are no servings . . . wire ends are permanently locked under the tapered sleeve . . . no long balky spliced section reduces useable sling length. They come to you ready for work . . . cost less than most other slings; if desired, they can be supplied in any multi-leg sling or fitting combination.

Send for All-Purpose Sling folder. John A. Roebling's Sons Corporation, Trenton 2, N. J.

ROEBLING (CF&I)

Subsidiary of The Colorado Fuel and Iron Corporation

If you write maker identify as IEN - 11134

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line . . . provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

K KELLER TOOLS

Send for illustrated descriptive bulletin and detailed information

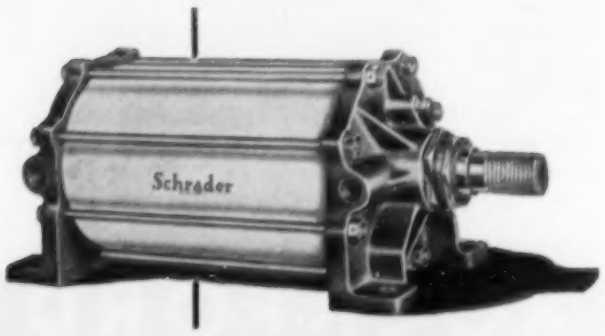
Keller Tool Company
1329 Fulton St., GRAND HAVEN, MICH.

If you write maker identify as IEN - 11135

The Best Muscles in Your Plant

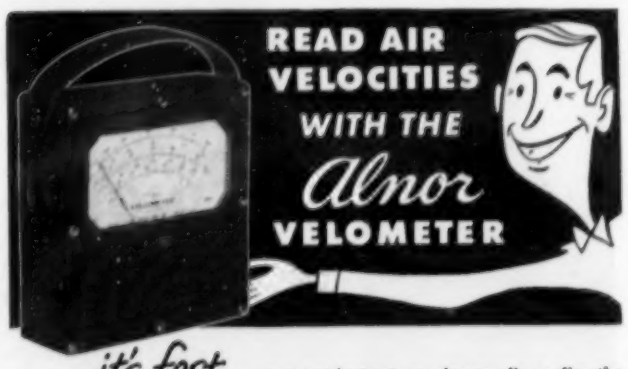
This compact, powerful Schrader Air Cylinder can eliminate costly mechanical movements . . . tiring, slow manual labor . . . space wasting mechanisms in many spots on your production machines. Leg mounted cylinders, shown here, will deliver a powerful push, pull, or push and pull, parallel to the mounting surface.

Cylinder action can be controlled manually or automatically. Speed, force and cycle time are all readily controlled by Schrader operating valves and accessories. Schrader cylinders are available in any type of mounting up to 8 inch bore in any stroke. Full details are in the Schrader catalog. Write for it today.



A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-34, Brooklyn 38, N. Y.

If you write maker identify as IEN - 11136



it's fast . . . you get instant, precise readings directly from scale face . . . no need for reference charts or calculations. Measure air flow through ducts, grilles, motors, spray booths, etc., or in the open.

it's accurate . . . brings laboratory standards of air velocity measurement to the production line, mine, mill . . . anywhere. Needs no special care or handling . . . anyone can use it and get accurate results.

it's portable . . . completely self-contained, hand-held. Rugged construction and sturdy case protect the Velometer from usual hazards of portable use. Available in scale ranges to 24,000 f.p.m. Wide selection of jets and fittings assures adaptability of Alnor Velometer to your application. Get full details and prices, write for Bulletin 2446-G. Illinois Testing Laboratories, Room 517, 420 N. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 11137

Flangeless Gear Couplings

SLASH DIRECT-DRIVE COSTS

of lightest to heaviest equipment

No nuts, bolts, flanges—slash down-time . . . cut assembly, operating, maintenance costs. Provide terrific savings in size, weight—size 10 shown weighs less than ⅓ as much as any other heavy-duty type! Horsepower capacity is *greater* because a *one-piece sleeve* transmits the load—*not* bolts. Call your Sier-Bath Coupling Distributor, or send for 16-page CATALOG. *Sier-Bath Gear & Pump Co., Inc., 9246 Hudson Blvd., North Bergen, N. J.*

Flexible Sier-Bath GEAR COUPLINGS
Founded 1905 *Also mfrs. of Precision Gears, Rotary Pumps* Member A.G.M.A

If you write maker identify as IEN - 11138

Fastening - Spring steel nut supplied in strips for quick assembly

Source: TINNERMAN PRODUCTS INC.
Box 6688, Dept. IEN, Cleveland 1, Ohio

New form of Speed Nut

Tandem-Type is a new partially sheared strip assembly of the company's standard spring steel nut. The strip form permits an operator to hold and position each nut while it is being tightened in place. Then he springs the strip a little to remove the tightened nut from the end and is ready for the next one. The strip can be specified in any desired length. The nuts are interchangeable for No. 6, 8, 10 and 14 screws.

If you write maker identify as IEN - 11139

Conveying - Wheels and trolleys to ride I-beams measuring 3 in. or more

Source: GREY HUB TROLLEY WHEEL CO.
17265 Gable Ave., Dept. IEN, Detroit 12, Mich.

Bulletin on request

The company announces new design in its line of wheels and assembled trolleys, for I-beam application, in which the wheels are hardened and an O-ring is employed to assist in keeping grease lubricant in and dirt out of the ball bearings. All wheels are equipped with axles carrying grease fittings but the units are pre-lubricated and do not require lubricating attention over considerable periods of time. The line includes plain, flanged and geared wheels with single and double ball bearing raceways.

If you write maker identify as IEN - 11140

Vinyl covered nylon construction is employed to produce a new light weight vacuum cleaner hose by Flexaust Company, 100 Park Ave., Dept. IEN, New York 17, N. Y. The exterior can be black, yellow or orange for good visibility. Interior diameter is 1½ inches. A 25-ft. length weighs 7½ pounds. The vinyl exterior will not damage walls or furniture should it come into contact.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11141

THE FIRST TRULY ENGINEERED SAFETY GRATING SOLVES SKIDDING PROBLEMS

Positive Footing

Bustin FIRM-GRIP

- Cuts Down Accidents
- Eliminates Danger Spots
- Improves Efficiency

Tested and proven—Bustin Firm-Grip prevents skidding even when completely covered with grease, graphite or wax, yet it is *unbelievably* comfortable to walk on. (It can even be walked on in stocking feet). Write for literature describing this Unique Safety Grating.

Where other grating products fail . . . try BUSTIN FIRM-GRIP for positive results.

*Pat. Pending

Bustin Write for Complete Literature
FIRM-GRIP GRATING CORP.
Dover, New Jersey Dover 6-8800
"BUSTIN—Designers and Manufacturers of Metal Products Since 1928"

If you write maker identify as IEN - 11142

Service when you need it

The other day a plant in Lawton, Oklahoma, called at 3:15 P.M. saying they were out of our stitching wire. One hour later the wire left our plant for the airport.

A Braniff Airliner took it out of Chicago and made contact with Continental airlines for Lawton. At 5:00 the balance of the order was off for Lawton by truck.

We'll Help You Out, Too

Wilson is a mill close enough to our customers' problems to be truly helpful when extra service is needed. Call or write today.

Manufacturers of
WIRE—NAILS—RIVETS

WILSON STEEL AND WIRE COMPANY
4840 SOUTH WESTERN AVENUE • CHICAGO 9, ILLINOIS

If you write maker identify as IEN - 11143

Hardness Readings in 2 seconds!

Webster PORTABLE **Hardness Testers** FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ¼". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

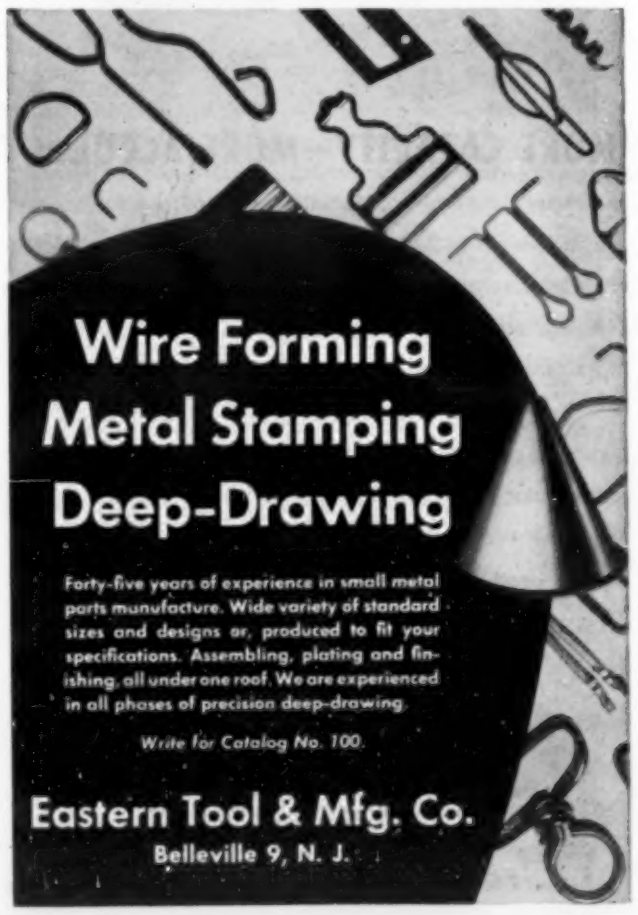
MODEL B-75 Direct hardness readings on copper, brass, etc.

Free FOLDER provides full information and shows sectional views.

Other models available

WEBSTER INSTRUMENT INC. Dept. N, 11856 Mississippi Ave. Los Angeles 25, California

If you write maker identify as IEN - 11144



If you write maker identify as IEN - 11145

Here a Torit 19-FB Dust Collector and Torit Wheel Hoods effectively solve the dust problem for a large double-end polishing lathe. No lint or polishing dusts escape to endanger working conditions.

Up to 95% of the dusts spin into the pull-out drawer in the base of this Torit Dust Collector and the remainder is trapped in the after-filter bag.

Torit Dust Collectors are turning in top performances in every type of industry. They will star for you. Write for information.

see our catalog in MACHINE TOOL CATALOGS

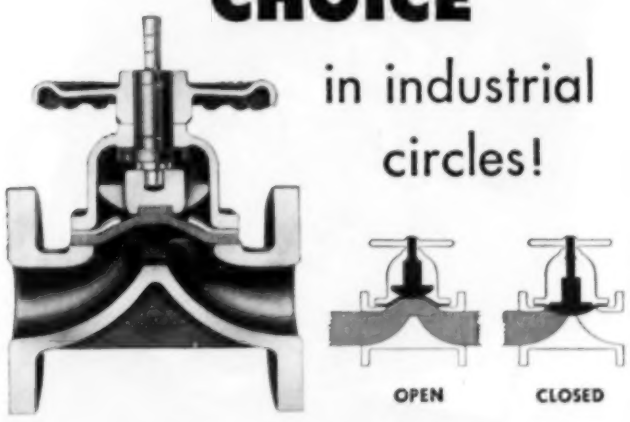
TORIT GIVES
- Easy installation
- Efficiency
- Minimum piping
- Low operating cost
- Easy cleaning
- Long service life
- Small floor space
- Adaptability
- 10 basic models

TORIT MANUFACTURING COMPANY
286 WALNUT STREET ST. PAUL 1, MINN.

If you write maker identify as IEN - 11146

ALL-AROUND CHOICE

in industrial circles!



GRINNELL-SAUNDERS DIAPHRAGM VALVES

In plants all around, Grinnell-Saunders Diaphragm Valves have proved themselves economical and efficient in handling materials as diversified as water, corrosive fluids, gases, beverages, foods, compressed air, suspended solids . . . in lines where corrosion, abrasion, contamination, clogging, leakage and maintenance are costly factors.

Available in a range of bodies, linings and diaphragm materials . . . and in a variety of styles and operating mechanisms. If you have a valve problem, consult a Grinnell engineer.

Types of Grinnell-Saunders Diaphragm Valves

Bodies
- Screwed ends — 1/4" thru 3"
- Flanged ends — lined or unlined, 1/2" thru 18"
- Butt weld ends — 1/2" thru 6"
- Socket ends — 1/2" thru 4"

Angle Bodies
- Screwed ends — 1/4", 3/8", 1/2", 3/4", 1 1/4", 2"
- Flanged ends — 3/4" thru 6".

Bonnets
- Handwheel operated bonnet (available with rising stem, travel stops, extended stem, chainwheel, adapted for Tejax indicator)
- Quick turn — lever operated bonnet, 1/2" thru 3"
- Bendix-Westinghouse topworks
  - standard (air to close — spring to open)
    - Robotair, 1/4" thru 1"
    - Rotochamber, 1" thru 4"; in tandem, 5", 6"
  - direct acting (spring to close — air to open)
    - Robotair, 1/4" thru 1"
    - Rotochamber, 1" thru 4"
  - double acting (air to close — air to open)
    - Robotair, 1/4" thru 1"
    - Rotochamber, 1" thru 4"
- Piston operated, 6" thru 12"
- Sliding stem bonnet, 1/2" thru 12"

Diaphragms
Natural rubber, neoprene, reinforced neoprene for vacuum, hycar, butyl, white gum rubber, Kel-F, Teflon, polyethylene.

Body Materials
Iron, bronze, stainless steel, cast steel, aluminum, monel, saran, durimet

Body Linings
Glass, lead, soft rubber, hard rubber, neoprene, saran

GRINNELL
WHENEVER PIPING IS INVOLVED

GRINNELL COMPANY, INC., Executive Offices, Providence, R. I.
Sales Offices and Warehouses in Principal Cities

If you write maker identify as IEN - 11148

Testing - Humidity cabinet to vary humidity and temperature

Source: BLUE M ELECTRIC CO.
306 W. 69th St., Dept. IEN, Chicago 21, Ill.

Four standard sizes

Relative humidity can be varied to any point between 50 and 99 per cent and held within 2 per cent of the set point with this new environment cabinet. Dry bulb temperature range is from ambient to plus 70 deg. C. with accuracy to 1 deg. C. Wet and dry bulb temperatures are individually controlled. A Modella tubular heater and auxiliary switch can be employed to obtain a saturated relative humidity as required for certain tests.

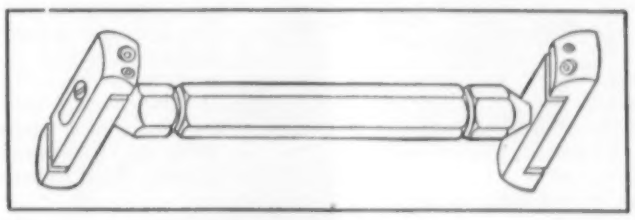
Water from a shop connection is circulated through an extended surface cooling coil equipped with a solenoid valve for automatic operation at ambient, slightly below ambient, or up to 70 deg. C. The equipment requires about 5 gal. of water per day. A low velocity blower, mounted on top of the cabinet, maintains uniform vertical air flow.

The cabinet is made of stainless steel with an inner glass observation door, alloy pressure type latches, automatic constant water level feeder, wet and dry bulb thermometer with wick and water box and two removable adjustable shelves. Insulation is 3 in. of Fiberglas. Four sizes rate 1.4 to 10 cu. ft. capacity. Operation is on 110-volt 60-cycle ac. A power selector switch, on the dry bulb heater, permits selection of input in relation to temperature and work load.

If you write maker identify as IEN - 11149

Gage - Adjustable plug design to check deviation in bore dimensions

Source: MADISON INDUSTRIES INC.
Box 131, Dept. IEN, Muskegon, Mich.



For "go" and "no-go" application

Micrometer screws are provided in the two-part head of this new Boregage to set the head over a range of diameters. A locking screw holds the set position. The head mounts singly or in pairs on a metal handle. Twenty-nine sizes cover an overall range from 0.995 to 7.692 inches. List price, per head, ranges from $21 to $66. The handle adds $2.20 to $3.70 in single and double end designs, including an adapter bushing.

The smallest gage in the line can be set over a range from 0.995 to 1.130 inches. The largest sets over 7.432 to 7.692 inches. The company recommends the use of sealing wax over the adjusting and locking screws after a setting has been made to a micrometer or to precision gage blocks. The gage will not roll from a bench since it is flat sided.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11150

JACO Horizontal

STOCK REEL

LOW COST — AUTOMATIC

No motors — No belts — No sprockets

POWERED BY THE NATURAL SPRING OF UNCOILING STOCK . . .

JACO Stock Reel operates automatically . . . without attention or maintenance . . . so simple there is nothing to get out of order.

The loop of stock between the Coil and the Press Feed completely eliminates slippage, kick-back and over-run.

JACO Stock Reels handle all types of resilient coiled stock for light stampings up to 250 lb. coil weight . . . up to 36" coil diameter . . . up to 6" stock width.

Proved in actual use by major manufacturers.
Guaranteed to work on your job or money back.

Write today for full details

Hingham 6-0873

JACO DEVICES, INC.
91 HIGH STREET, HINGHAM, MASS.

If you write maker identify as IEN - 11151

3000 FINISHED WIRE LEADS per hour . . . automatically

- measured
- cut to length
- stripped one or both ends
- counted

with the

ARTOS CS-6 AUTOMATIC

FAST, FULLY AUTOMATIC production of finished wire leads can save you hundreds of dollars in time and labor. In the cutting and stripping of insulated wire, cord, cable, etc., up to No. 10 stranded or No. 12 solid, the ARTOS CS-6 gives you these advantages:

- *Uniform stripping and cutting lengths.*
- *Elimination of human error.*
- *Quick, easy set up.*
- *Reduction of work spoilage, no nicking of wire.*

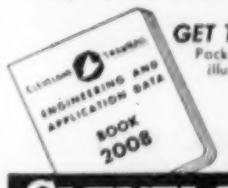
WRITE FOR FREE BULLETIN. Get the complete story Ask for Bulletin 35-C.

Automatic Wire Cutting and Stripping

ARTOS ENGINEERING CO.
2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as IEN - 11152

Rolls, or loads of any materials, conveyed on a Cleveland Tramrail overhead system, are quickly and accurately weighed without handling by running the carrier onto a track section which is connected to a floor scale.



GET THIS BOOK! Packed with helpful illustrated data.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4210 East 285th St., Wickliffe, Ohio

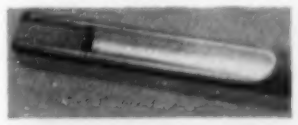
CLEVELAND TRAMRAIL

If you write maker identify as IEN - 11153

Do you know this about Laminates?

SHEET COMBINATIONS
Synthane can be bonded securely to rubber, metal and other materials.

TUBING COMBINATIONS
Synthane can be cured directly onto metal tubes or rods to form a tight, permanent bond.



PRINTED SYNTHANE
Despite Synthane's hard, smooth surface, we can print on it to make instrument panels, dials, and other components. The process is permanent, the impressions stay put.

POST FORMING
Certain grades of Synthane may be reheated and post-formed.

SYNTHANE
SYNTHANE CORPORATION
SOUTH RIVER ROAD, OAKS, PENNA.
Manufacturers of Laminated Plastics

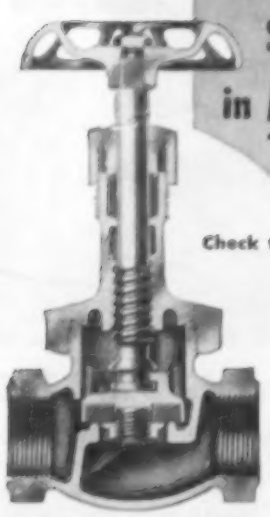
Please send me a copy of the Synthane catalog.

Name _____

Address _____

City _____ (zone) _____ State _____

If you write maker identify as IEN - 11154



JENKINS VALVES for Safety and Economy in L.P.G. SERVICES

Check these special design features

- **Extra heavy, reinforced body** — takes all ordinary pipe strains; provides a safety factor far above any L.P.G. service needs.
- **Crowned seat** — insures positive tightness, meets N.B.F.U. test of 500 p.s.i. under seat when valve is closed.
- **Improved composition disc** — meets every test of L.P.G. service.
- **Deeper packing box** — and spiral, lubricated packing material permit spindle to turn with minimum friction.
- **All other parts specifically designed** and proportioned to meet rigorous requirements of critical L.P.G. service.

Fig. 506 BRONZE GLOBE for L.P.G. SERVICE 400 lbs. O.W.G.

Construction features of Jenkins Fig. 507 Check and Fig. 508 Angle L.P.G. Valves same as for above.

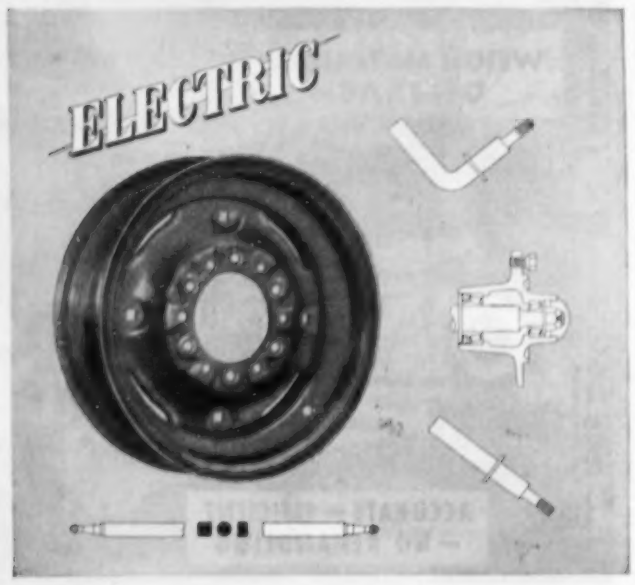
Ask your Jenkins Distributor for the new Jenkins L.P.G. Valve folder, or write: Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS DIAMOND MARK

JENKINS VALVES

SINCE 1864

If you write maker identify as IEN - 11155



A Wheel for Every Job!

Our engineers will recommend the most efficient and economical wheel and axle assembly for your unit. We invite your inquiries.

WRITE US FOR CATALOG

ELECTRIC WHEEL CO.
2800 SPRUCE, QUINCY, ILLINOIS

If you write maker identify as IEN - 11156

RUGGED GUARDIAN of Persons and Property

Bothersome intruders may roam your grounds . . . property appearance can be spoiled . . . employees need accident protection. These are jobs for Continental, the better installed, longer lasting chain link fence. Get peace-of-mind and protection permanence by contacting your nearest Continental sales office now.

CONTINENTAL STEEL CORPORATION
Kokomo, Indiana
Send me FREE copy of "Planned Protection" —complete manual on property protection.

Name _____
Address _____
City _____ State _____

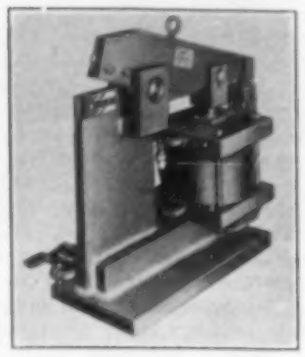
*TRADE MRK. REG. U.S. PAT. OFF.

CONTINENTAL STEEL CORPORATION

If you write maker identify as IEN - 11157

Shearing - Air operated machine rates mild steel to 1¼ in. diameter

Source: CURRY AIR SHEAR CORP.
941 Oliver Bldg., Dept. IEN, Pittsburgh 22, Pa.



Bulletin 50

Air pressure, at 80 lb., applied in the main double acting cylinder in this new Model-A shearing machine, is sufficient to cut a round mild steel bar measuring 1 in. in diameter. The machine operates on 60 to 125 lb. with control centered at a foot operated valve. The upper pivoted jaw is equipped with a hydraulic cylinder and piston, at the outboard end, to absorb shock when the work cuts through and pressure is suddenly released.

The jaws are equipped with four-edge alloy steel knives measuring 6 by 3 by 1 inch. They can be turned to present one edge after another as each becomes dull. Set screws provide for adjustment after grinding. Jaw opening is maximum at 2¾ inches.

The cutting area stands about 30 in. above the floor line. The machine measures 15 by 36 by 38 in. and weighs about 1,500 pounds. The bearings are equipped with standard replaceable bushings. Operation requires about 2 sec. for a complete cutting cycle.

If you write maker identify as IEN - 11158

Drive - Speed reducer to mount on a vertical driven shaft

Source: AMERICAN PULLEY CO.
4200 Wissahickon Ave., Dept. IEN, Philadelphia, Pa.

V-belts to motor

Illustrated is new vertical design of the Shaft-King speed reducer, previously described in horizontal assembly in IEN-9639-53. The new unit is available from stock in 13 to 1 and 20 to 1 ratios for drives rating 242 hp. A Torque-Arm overload release can be supplied for use with the reducer to prevent damage if the drive is blocked.

Construction includes a three wall internally ribbed cast iron housing for permanent gear and bearing alignment and to hold lubricating oil for the helical alloy steel gears and the ball and roller bearings.

If you write maker identify as IEN - 11159

An ink to mark on wet surfaces is available from Organic Products Co., Box 428, Dept. IEN, Irving, Texas. It is employed in an ordinary stamp pad and is applied with a rubber stamp to metal or other surfaces while they are in water or immediately after they have been taken out. Drying is fast because the ink "water sets." There is no color bleeding into the water. Adhesion is good but the mark can be removed with naptha or vapor type degreasing. The ink will not etch or corrode the metal.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11160

HIGH PRESSURE PUMP

air driven

FOR PRESSURES TO 30,000 PSI

Measures 8¼" wide x 9⅝" deep

Boost 100 PSI. air pressure to 10,000 PSI. fluid pressure for $173.25 (FOB Gardena, Calif.). Eight standard models for output fluid pressures of 1,000 to 30,000 PSI. Special models for lower or higher pressures.

Applicable wherever low volume output at high pressures is the requirement. For oil or water service. Complete power packages also available. Send for bulletins.

SPRAGUE
Engineering and Sales Corp.
1144 WEST 135TH STREET, GARDENA, CALIFORNIA

If you write maker identify as IEN - 11161

New! Incomparable!

dyna-trol
ELECTRIC FURNACES

COMPARE THESE FEATURES

- Infinite Zone Control to 2000° and 2300°F
- Zone temperature indication by Pyrometer Selector Switch
- Porcelain Element Holders
- Automatic Hold and Cut-off instrument available
- Infinite Variety of Time-Temperature Curves Obtainable
- Rugged Construction. Highest quality insulation used.

COMPARE THESE PRICES

Firing chamber (H. W. D.)	Semi-Auto. prices	Auto. prices
6"x12"x12"	$295.	$432.
12"x12"x12"	$405.	$550.
9"x 9"x18"	$480.	$625.
14"x14"x14"	$525.	$680.
20"x20"x20"	$975.	$1140.
18"x18"x36"	$1125.	$1375.
(To 2000° Maximum Temp.)		

Over 40 Standard Models — Write for complete literature

L&L MANUFACTURING CO.
INDUSTRIAL DIVISION
Chester 30, Pa.
Some Territories Available For Representation

If you write maker identify as IEN - 11162

Write for this free booklet—Form 1542

MARLIN-ROCKWELL CORPORATION
Exec. Offices Jamestown, N. Y.

If you write maker identify as IEN - 11163

Saves You Money On All Portable Drilling Operations

GUID-O-DRIL

Pronounced "Guide O Drill"

true holes-vertical horizontal at an angle

anywhere, in anything that can be drilled!

not a spirit level

but an accurately engineered attachment that increases the profitable productivity of any portable drill, electric or pneumatic

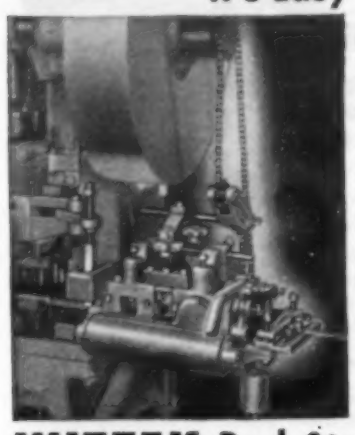
THE HIGH STANDARD MANUFACTURING CORP.
DEPT. E
HAMDEN • CONNECTICUT

$6.95 from your supplier or write for folder

If you write maker identify as IEN - 11164

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds



Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements.

4472

WITTEK Reel Stands

Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

Write for full particulars

WITTEK Manufacturing Co.
4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

If you write maker identify as IEN - 11165

HOW USS GERRARD STRAPPING CAN SAVE YOU MONEY

● If you've been under the impression that you can't afford to use steel strapping in your packaging operation, it might be worth your while to think about this.

GERRARD Round Steel Strapping costs about *40% less* than any other form of metal reinforcement.

GERRARD'S semi-automatic Model "Q" machine, using Round Strapping, can make 12 to 15 tight, pilfer-proof ties per minute—*steel* ties, securely closed with the rugged GERRARD twist-knot. GERRARD's hand-operated stretchers and sealers do their job quickly and easily on super-strong USS GERRARD *Flat* Steel Strapping.

Result—a fast, neat, A-1 tying job done in less time at less cost. You get more output per man hour, and you'll find your packaging chores easier to do since GERRARD Round Strapping ties flats, rounds, heavy or light bundles with equal proficiency.

Contact a GERRARD engineer. He'll be happy to show you how to convert your present tying operation to the quick, efficient GERRARD Method of tying with *steel*. His recommendations won't cost you a cent. Write now.

GERRARD STEEL STRAPPING DIVISION
UNITED STATES STEEL CORPORATION
4701 South Richmond St., Chicago 32, Ill.

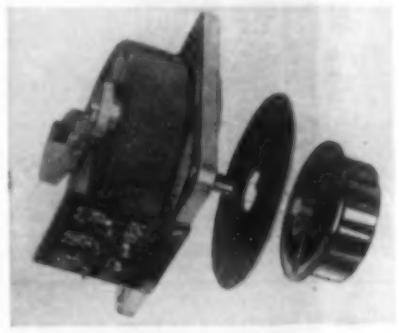
USS

USS GERRARD
ROUND STEEL **STRAPPING** FLAT STEEL
UNITED STATES STEEL

If you write maker identify as IEN - 11167

Transformer - Variable voltage, continuously adjustable for control use

Source: GENERAL RADIO CO.
275 Mass. Ave., Dept. IEN, Cambridge 39, Mass.



Concealed taps

Type M-2 and M-5 are new autotransformers in the company's Variac line. They are rated at 2 and 5 amp. respectively for 115-volt, 350 to 1,200-cycle input. Output range is 0 to 115 or 0 to 135 volts depending on the connections. In the former case, maximum output current is 3 amp. and in the second case it is 7.5 amperes. Two and three gang assemblies and three-phase controls are available in addition to the single units.

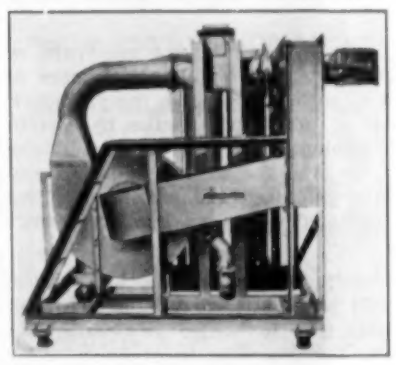
The new design has been "ruggedized" to withstand shock, vibration and environment tests under MIL-T-845-A Specifications. Standard construction employs the company's Duratrak brush track surface in which a silver alloy coating prevents contact surface deterioration when the transformer is operated continuously at fixed brush settings.

The assembly employs a rectangular base with corner holes for attachment to walls and bulkheads without rear access. First class thermal contact between the base and coil promotes cooling. Back to back mounting of two coils minimizes weight and size in ganged assembly. Radiators are counterbalanced to hold their settings. Base price is $15.50 and $22.50.

If you write maker identify as IEN - 11168

Conveying - Pneumatic loader blows bulk material into freight car

Source: DAY COMPANY
810 3rd Ave. N. E., Dept. IEN, Minneapolis 13, Minn.



Built to order

Illustrated is a new portable assembly of the company's pneumatic car loader with mounting on casters to operate at several loading stations. Weight can be taken from the casters to provide a solid foundation after the equipment has been moved. The weight can be returned to the casters to move to the next station. The equipment will load a 40-ton box car in 2 to 4 hours depending on material.

Material is fed from an overhead screw conveyor through rotary valves to the intake side of a motor driven centrifugal blower for delivery into the car. The intake connects also to the car from which it draws air to establish a small negative pressure in the car to prevent dusting. A small amount of this air passes into a filter. When the run is completed, a valve is opened to clean out the dust accumulated in the filter and put it into the car.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11169

FREE DOWEL PIN BULLETIN

Tells How to Save Assembly Time!

DANLY

DOWEL PINS

- Accurately hardened—will not upset!
- Precision ground to limits of ±.0001"
- Two complete size ranges—standard and oversize
- Tapered lead end—easy to drive

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue
Chicago 50, Illinois

Complete Data!
Send For This Free Bulletin Today!

If you write maker identify as IEN - 11170

For fast, accurate inspection and measurement

Fast, accurate, and requiring little skill to operate, the Kodak Contour Projector may well be the answer to your inspection, assembly, or measurement problems.

Few objects are too small or complicated for rapid, complete inspection under magnification with a Kodak Contour Projector. And you can handle large parts, too, for there's an unvarying 8 inches between lens and object at all magnifications from 10× to 100×. Surface illumination for checking blind holes, cavities, or other surface features is available by the mere flick of a switch.

To learn how the Kodak Contour Projector can be used in your plant, send for Booklet F1-68.

Special Products Sales Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

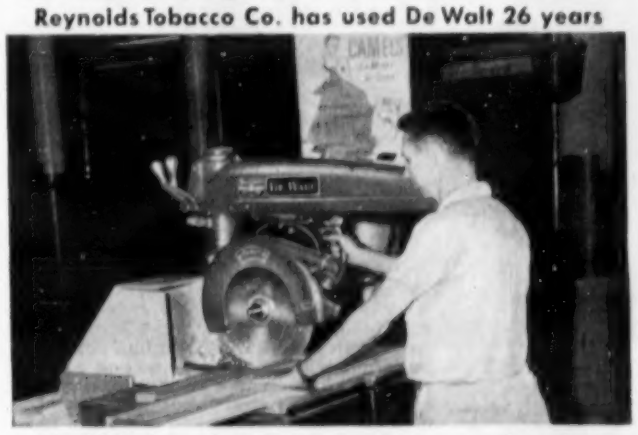
the KODAK CONTOUR PROJECTOR

Kodak

If you write maker identify as IEN - 11171

All-Purpose AMF De Walt is best for plant maintenance!

Reynolds Tobacco Co. has used De Walt 26 years



You'll find *one* low-cost AMF De Walt® will meet *all* your plant maintenance needs—and that includes all types of construction work and boxing and crating.

Just one De Walt turns out pallets, conveyor bucks, crating, book shelves, ladders and many other products. It's amazingly versatile—cross-cuts, miters, bevels, rips, dadoes, shapes and many others! Tops in speed, accuracy and safety, too.

Send for catalog to De Walt Inc., Dept. IEN-54-10, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.

DE WALT
POWER SAWS
In Canada: De Walt Canada Ltd., Guelph, Ontario

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as IEN - 11172

have you a CORROSION problem?

BOLTS • NUTS
SCREWS • RIVETS
COTTER PINS
WASHERS
SPECIALS

IN BRASS
SILICON BRONZE
NAVAL BRONZE
COPPER
NICKEL
ALUMINUM
MONEL
STAINLESS STEEL

Harper Everlasting Fastenings are corrosion-resistant—produced from non-ferrous metals and all stainless steels. For fastenings that improve the appearance of your equipment—add years to its life, call Harper—largest manufacturer in its field. Over 7,000 different items in stock to meet your requirements. Write for catalog.

HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog 25.

Name.....
Company.....
Address.....
City..... State.....

If you write maker identify as IEN - 11173

NEW!

Lightweight Pallet Truck is Easiest To Pull . . .

. . . never needs greasing

Here's the best hydraulic pallet truck buy in years! New Lewis-Shepard Model HPL weighs only ½ as much as standard trucks . . . handles loads up to 2000 lbs. . . . costs you less to buy . . . and it's the easiest pulling truck made!

Factory-sealed ball bearings in the HPL eliminate periodic greasing . . . virtually eliminate all maintenance . . . insure longer truck life!

Get all the facts on this new, low cost, lightweight truck. Write for Circular 26A . . . TODAY!

The Most Complete Line of Materials Handling Trucks

LEWIS-SHEPARD

733-10 Walnut St., Watertown 72, Mass.

The "MASTER" Line

If you write maker identify as IEN - 11174

BUILD YOUR OWN SPECIAL MACHINES

At Low Cost . . . to Meet High Production Schedules

for

DRILLING
TAPPING
CHAMFERING
REAMING

and similar operations

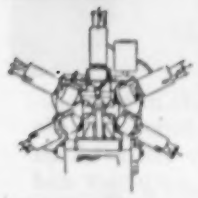
WITH BLACK PACKAGED UNITS

Self-contained—operate in any position. Easy to design into special purpose set-ups for single or sequential operations.

Black employs new principle—traversing motor shaft is work spindle. Torque applied uniformly with practically no end play. Air feed advances tool rapidly to work—hydraulic control gives uniform feed to end of work cycle. Tapping unit controlled so tap follows own lead. No chamfering first thread. No stripping on return stroke. Depth accuracy to within .001". Simple adjustments. Wide range of sizes and speeds. Step-drilling controls available.

Write for descriptive literature.

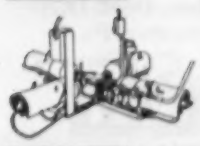
NO SPLINES



NO CLUTCHES

THE BLACK DRILL COMPANY, INC.

1378 East 222nd Street • Cleveland 17, Ohio



NO CAMS

NO REVOLVING WEIGHTS

NO GEARS

If you write maker identify as IEN - 11175

How to check DOWNTIME!

NOW, you can see, right in your office Every time a machine STANDS IDLE—and how long!

with electrical Model M SERVIS RECORDER

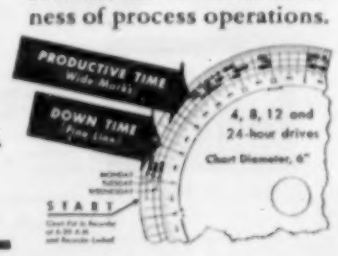
The Servis Recorder Chart (sample portion below) instantly shows all stops and delays. So you can reduce downtime, increase production and thus repay the cost of Servis Recorders *many times over!* . . . Also valuable in time studies to set rates and to check exactness of process operations.

FEATURES OF NEW MODEL M

• Visible, electrical recording • Location anywhere, distant from machines • No ink, no pen to obscure chart • Far lower cost than comparable devices.

WRITE FOR "MODEL M" FOLDER

THE SERVICE RECORDER CO.
1375B Euclid Avenue
Cleveland 15, Ohio



For Your Special Information

ALL MAKERS ARE LISTED IEN S-20

Industrial Equipment News is published to keep you up to date on new industrial developments, month by month. It also provides information, through its advertising, of a great many products for which you have constant or recurring need. You can make this source reference really complete, to include all of the things manufactured in these United States, by adding the Thomas' Register of American Manufacturers.

Thomas' Register lists all of the manufacturers with whom you are accustomed to do business and, in addition, all the other makers of any product you can possibly think of. Every effort is made to include every product and every maker, big and small, who can provide you with equipment, tools, materials, supplies, services. Just be certain to place your subscription in time to reserve a set of the 1955 Edition before the print order is exhausted.

YOUR COMPANY LETTERHEAD REQUIRED IEN S-21

Please watch carefully for the request, included in certain of the editorial items, that you make inquiry on your "company letterhead" for copies of literature or for additional information on subjects that interest you. This request appears mostly in the "Useful Information" and "New Literature" columns. It is in a few of the advertisements. Manufacturers who make this request guarantee to service only those inquiries that reach them direct on your company stationery. They do not undertake to pay serious attention to any inquiries forwarded to them through IEN's reader service form.

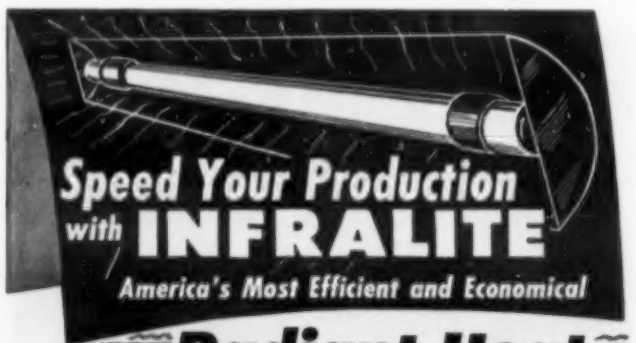
The request is an outgrowth, over the past dozen years, of the effort by certain publishers to stimulate the number of inquiries without regard to serious intent on their readers' part. It also is the result of "shot gun" tactics by certain manufacturers and their publicity agencies to spread news releases far and wide in the hope for inquiry action of any sort. These practices have penalized the serious selective reader service that IEN initiated and is making every effort to continue.

We believe that the manufacturers who are making the "letterhead" request would profit themselves by selecting the publications from which they are ready to receive publication serviced inquiries, knowing that those publications have screened their readers to assure their positions of responsibility. We hope that this action will be taken before too long. In the meantime please observe the "company letterhead" request to assure the service you want in these particular cases.

Best U. S. investment:

United States Savings Bonds

If you write maker identify as IEN - 11176



Speed Your Production with INFRALITE

America's Most Efficient and Economical

Radiant Heat

If your problem involves:

VULCANIZING RUBBER • DEGREASING METALS
BAKING VARNISH • HEAT TREATING LEATHER
DEHYDRATING FOOD • PASTEURIZING FOOD
DRYING LACQUER, INK, PAINT, CERAMICS
GLASS, FIBRE, COMPOSITION OR IF YOUR PROBLEM REQUIRES CONTROLLED HEAT FOR OTHER APPLICATIONS.

And if you now use:

AIR DRYING • GAS, OIL OR ELECTRIC HEAT

You will be amazed by the increased quality control and big savings in money, time and labor when you use INFRALITE RADIANT HEAT.

WITHOUT OBLIGATION, ASK OUR REPRESENTATIVE TO CALL, OR WRITE FOR BULLETIN No. 54

THERMEX Company, Inc.

537 BERGEN ST., HARRISON, N. J. HU 5-2323

If you write maker identify as IEN - 11177

FREE CATALOG!

available to you who are interested in the facts on open steel flooring.

Up to the minute information on the hows and whys of construction and installation of Tri-Lok Open Steel Flooring may now be at your finger-tips. Here is a four-page catalog designed to aid you in selecting the best types and styles of open-steel flooring for your particular construction project.

IN THIS CATALOG YOU'LL FIND

- Tables of Safe Loads
- Specifications required for open steel flooring installation
- Types of Tri-Lok Open Steel Flooring available
- Information concerning construction, sizes, strength and adaptability of Tri-Lok Open Steel Flooring

FOR YOUR COPY, WRITE FOR BULLETIN PW 1102

DRAVO CORPORATION

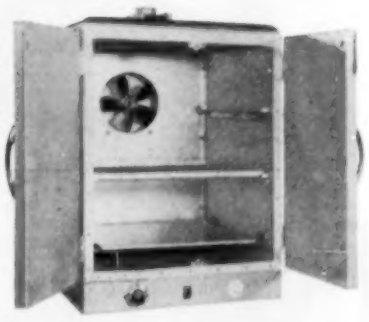
National Distributor for THE TRI-LOK CO.

Dravo Building, Fifth and Liberty Avenues, Pittsburgh 22, Pa.

If you write maker identify as IEN - 11178

NEW! VALUE PACKED!

JUNIOR UTILITY OVEN



LOW COST • EASY TO OPERATE • MINIMUM MAINTENANCE

Ideal for

- DRYING
- BAKING
- CURING
- PROCESSING
- HEAT TREATING

Here is a new line (4 models, temperature ranges up to 1000°F.) that incorporates every possible advantage of experienced oven design. Use the Jr. Utility Oven for economical manufacturing, product control, sample testing, etc. External dim. 24" x 24" x 34" high. Handsome gray hammertone finish. Write for complete data on new, advanced features.

NEW ENGLAND OVEN & FURNACE CO.
POST ROAD, ORANGE, CONN.

If you write maker identify as IEN - 11179

STICHT TACHOMETERS

FOR EVERY NEED . . . EVERY SPEED

CENTRIFUGAL HAND TACHOMETERS

Universal Type U with 5 ranges in one instrument.
CAT. NO. 303, 30-12,000 RPM
CAT. NO. 314, 45-18,000 RPM
CAT. NO. 322, 60-24,000 RPM
CAT. NO. 346, 120-48,000 RPM
Many other models with one, three or five ranges.
BULLETIN 750

CHRONOMETRIC HAND TACHOMETERS

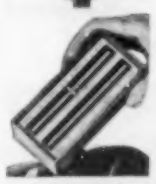
"Jaquet" Speed Indicators with built-in chronometer movement. Timing period 3 or 6 seconds. Guaranteed accuracy 1/2 of 1 per cent. Various accessories.
CAT. NO. 2301, 0-10,000 RPM
CAT. NO. 2302, 0-1,000 RPM
CAT. NO. 2304, 0-100 RPM
Suitable double rated speed.
BULLETIN 735

CENTRIFUGAL STATIONARY TACHOMETERS

For permanent mounting on machines. Model J. Sizes 3 in., 4 in., 5½ in., 8 in. and 10 in. dial diameters. Flexible cable driven. Many standard ranges reading RPM, FPM, YPM, etc. BULLETINS 794, 795, 796

VIBRATING REED TACHOMETERS

PORTABLE AND STATIONARY



Measure speed by touch. Many different ranges from 900-100,000 RPM.

WRITE FOR BULLETIN 770-A

HERMAN H. STICHT CO., INC.
27 PARK PLACE, NEW YORK 7, N. Y.

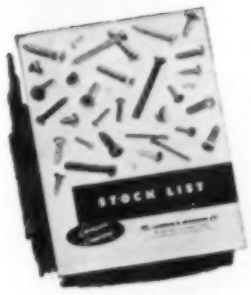
If you write maker identify as IEN - 11180

A "STOCK" REPORT that's always profitable

Once more, Lamson offers a service to help you in purchasing bolts and nuts.

This Stock List is a monthly compilation of availabilities of the different types and styles of Phillips and slotted machine and tapping screws.

You will find it profitable in terms of certain shipment, fast delivery, advantageous shipping costs and convenience, to request this "Stock" Report from Lamson & Sessions. With this method of complete stock listing we are, in fact, your warehouse inventory of fasteners at no cost to you.



Regular Inventory— Not Surplus!

This stock list, printed in an easy-to-file size, is yours AT NO COST. It will be sent each month simply by requesting it. Write today for your monthly "Stock" Report.

The LAMSON & SESSIONS Co.
1971 West 85th St. • Cleveland 2, Ohio
Plant at Cleveland and Kent, Ohio • Birmingham • Chicago

If you write maker identify as IEN - 11181

See for yourself how U. S. Matchless Packing reduces wear on rods, reduces packing costs

This demonstration set of U. S. Matchless has been cut in half. When set is squeezed by hand, note how the lips spread out.

These pictures show how pressure (whether gas or fluid) forces the double pliant lips of U. S. Matchless Packing against the rod and side of the stuffing box. *This self-adjusting, automatic action plus the blunt edge design reduces wear on the rods, prolongs packing life and hence lowers maintenance costs.*

U. S. Matchless is recommended as original equipment by some of the largest makers of hydraulic presses and rotary oil drilling rigs. It is ideal for rams, accumulators, triplex pumps and oil well swivels. It is designed to handle hot and cold water, brine and ammonia, hot and cold oils, crudes, gasoline and all petroleum products, and is a favorite of manufacturers of liquid or gaseous materials. U. S. Matchless Packings are obtainable through any of our selected distributors or any of our 27 District Sales Offices, or by writing the address below.

When pressure is released, the lips retract. This action duplicates what happens when U. S. Matchless is subjected to hydraulic pressure *plus* subsequent release.

UNITED STATES RUBBER COMPANY
Mechanical Goods Div. • Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 11183

Valve - Two-way solenoid design for air, gas, oil, water, to 250 lb.

Source: AUTOMATIC SWITCH CO.
391 Lakeside Ave., Dept. IEN, Orange, N. J.

Bulletin Form 708

Normally closed or normally open design is available in this new Bulletin 8210A solenoid valve. Two sizes are ⅜ and ½ inch. Two additional sizes, ¾ and 1 in., will be available shortly. Maximum pressure is 250 lb. on air in normally open assembly and 200 lb. when normally closed with a continuous duty ac. coil. The valve is available for standard ac. and dc. connection. It measures 2¾ in. face to face by about 3¾ in. in height.

The valve disc is molded into a Hycar diaphragm that is clamped between the forged brass bonnet and body. The disc is fitted with a central pilot port. This port is closed by the solenoid plunger when the solenoid is de-energized in normally closed assembly. Full line pressure applies above the disc, through a port in the diaphragm connecting to the up-stream side, to add to the solenoid spring action and provide seating force for tight closure.

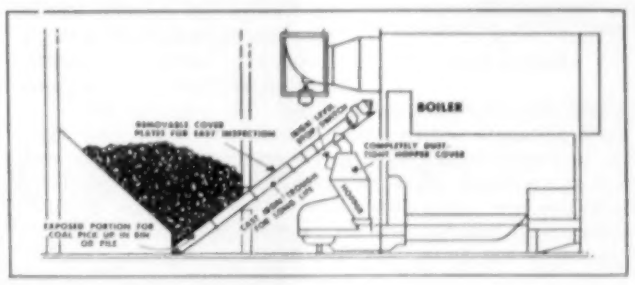
The pilot port is opened, releasing pressure on top of the diaphragm to the outlet side of the valve, when the solenoid is energized. Line pressure then raises the diaphragm to open the main port and permit flow.

The normally open Type 8210A operates on the same principle except that the pilot port is located on top of the solenoid and the pilot port in the diaphragm is sealed. Standard construction includes 24-in. coil leads with a Class A coil supplied as standard. A Class H glass silicone insulated coil can be specified for high temperature, or a molded plastic covered coil for severe moisture conditions.

If you write maker identify as IEN - 11184

Heating - Conveyor fed stoker designed to minimize boiler room labor

Source: CANTON STOKER CORP.
Andrew Place S W, Dept. IEN, Canton 1, Ohio



To fit your boilers

Illustrated is a new unit assembly of the company's Ram-feed Stoker and its Flow Tube conveyor, previously described IEN-502-53. The new assembly is available with either the Vulcan or LoSet type of stoker. Controls start the conveyor when the stoker hopper reaches a predetermined low point and stops the conveyor when the hopper has been filled. Flow of coal into the furnace is pro-rated to keep step with steam demand so the only required attention is ash removal.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 11185

Then you need to know about NEW Irvington Insulating Varnish No. 180

This new varnish was specifically formulated to provide outstanding electrical and physical properties at temperatures up to 356° F.

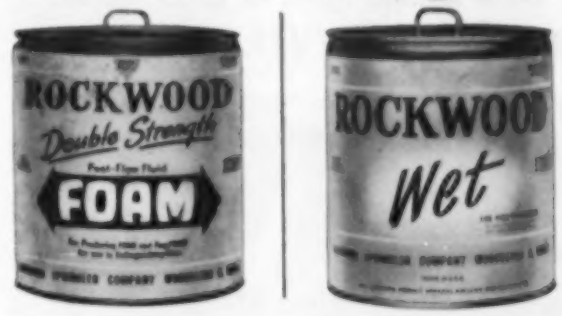
Irvington Varnish No. 180 has a dielectric strength of 2,100 vpm (dry), good resistance to moisture and acids; excellent oil resistance, adhesion, toughness and storage stability. Can be used on practically any type of electrical equipment (with the possible exception of totally enclosed). Write for Technical Data Sheet.

LOOK TO IRVINGTON FOR INSULATION LEADERSHIP

IRVINGTON VARNISH & INSULATOR
DIV. OF MINNESOTA MINING & MFG. CO.
31 ARGYLE TERRACE, IRVINGTON 11, N. J.
Plants: Irvington, N. J.; Monrovia, Calif.; Hamilton, Ontario, Canada

If you write maker identify as IEN - 11186

Cut Fire Losses with These Firefighters



Rockwood Double Strength FOAM covers burning surfaces faster, seals off combustible vapors and flows freely around obstructions — even at sub-zero temperatures. Three parts FOAM mixed with 97 parts water form a foam blanket that re-seals if broken. Because it's concentrated, FOAM saves storage space and shipping costs.

Rockwood WET increases firefighting action of water, is a great aid in putting out deep-seated fires involving combustibles such as wood, paper, cloth. Also excellent wherever water is scarce. With WET, rekindling is reduced.

Use Rockwood's FOAM Eductor and Type SG-60 Nozzle for introducing these firefighting liquids into your hose lines. For complete details, write for free, illustrated Rockwood catalog, "Fire Fighting Products." Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to Cut Fire Losses
310 HARLOW STREET, WORCESTER 5, MASSACHUSETTS

If you write maker identify as IEN - 11187

Catalog No. 784

Designed for fast, accurate threading on a small budget, the "Thrift Model" has two quick-opening, lever-operated die heads to cover the entire conduit range of 1" to 4"; extra range, ½" and ¾". Fully adjustable for over or undersize threads. Front-gripping and rear-centering chucks are wrenchless, quick acting, universal.

Write today for a free, factual booklet and the name of your local Oster Distributor.

THE OSTER MANUFACTURING CO.
Main Office and Factory:
2053 East 61st St. • Cleveland 3, Ohio

Builders of Cost Reducing Threading Equipment Since 1893

If you write maker identify as IEN - 11188

Reconditioned building.

After the fire.

Building wins *"Trial by Fire"*

A 45-minute fire, fed by solvents and auto tires, raged within this Armco Steel Building. Yet the owner was able to make the building serviceable and presentable without replacing any Armco STEELOX Building parts.

All-steel Armco Buildings are noncombustible and weather-tight. There is nothing to crack, warp or rot. No previous experience is necessary for easy, fast erection.

Use economical Armco Buildings for warehouses, shops, offices and other industrial needs. Sites can be permanent or temporary. Ask us how these buildings can save money.

ARMCO DRAINAGE & METAL PRODUCTS, INC.
2614 Curtis Street • Middletown, Ohio

If you write maker identify as IEN - 11189

PUMP PAINT DIRECT

from mixing room to spray booths!

WITH ALEMITE VERSATAL PUMPS

save time, save money . . .

cut paint handling in half!

A PRODUCT OF SW

- ★ Eliminate delays and downtime – mismatching – fire hazards.
- ★ One Versatal Pump can supply as many as six spray heads – delivers up to 27 gallons per minute!
- ★ Open-frame design separates pump from air motor – no fouling. Piston is self-oiling.

FREE Idea book. How Versatal methods can help solve your production problems. Write Alemite, Dept. B-104, 1830 Diversey Parkway, Chicago 14, Illinois.

ALEMITE Versatal SPRAY PUMP EQUIPMENT

If you write maker identify as IEN - 11190

WHEN REPEAT SENSITIVITY IS REQUIRED . . .

. . . SPECIFY THE *UNITED ELECTRIC* TYPE G9 PRESSURE-VACUUM CONTROL

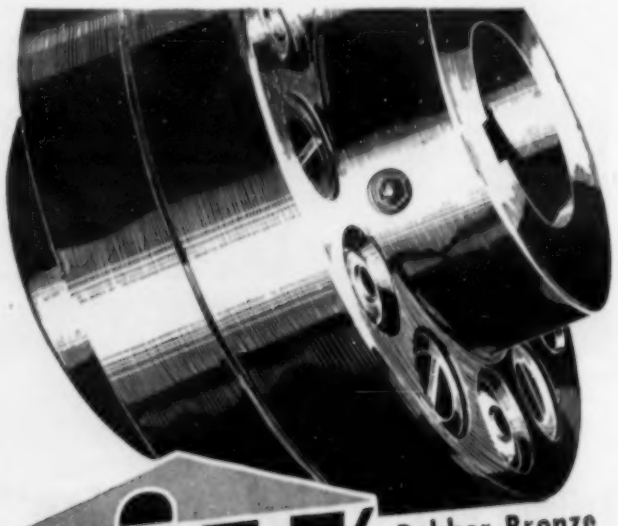
The Type G9 Pressure-Vacuum Control is designed for applications requiring uniform on-off differential between .2" and 10" WC. It is a highly sensitive, precision-built unit with internal or external, calibrated or uncalibrated adjustment. It is watertight unless the adjustment is external.

Switch Ratings: The load-carrying capacity of the switch is directly proportionate to the switch differential. Load ranges from 1 to 15 amp. at 115/230 V., A.C.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 11191



AJAX Rubber-Bronze Bushed **flexible couplings**

standard for 33 years

● Design engineers approve Ajax Flexible Couplings for protecting bearings, armatures, rotors and other vital, expensive parts. Hundreds of thousands in use. *Ajax knows couplings.* Write for new Catalog No. 55.

AJAX FLEXIBLE COUPLING CO. INC. • WESTFIELD, N. Y.

If you write maker identify as IEN - 11192

Handling - Mobile power shovel for use in free flowing bulk materials

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek 49, Mich.

Bulk Master at work

Capacity is 11 cu. ft. or 1,200 lb. in handling grain, sand, fertilizer, chemicals with this new engine driven shovel. Drive is by a gasoline engine with two speeds forward and reverse. Outside turning radius is 73 inches. Length is 109 inches. Width is 46½ inches. Overall height is 60 inches. Weight is 4,400 pounds.

Shovel lift speed is 6 sec. with dump speed at 1 sec. and lowering speed of 3 seconds. Dumping angle is 60 degrees. The bucket rides level so a load will not spill in any position in its range of vertical movement.

If you write maker identify as IEN - 11193

Switch - Toggle operated assembly of two subminiature single pole units

Source: MICRO SWITCH DIVISION
30 E. Spring St., Dept. IEN, Freeport, Ill.

List is $8.50

Electrical rating for this new double assembly of single-pole double-throw switch is 5 amp. on 110 or 220-volt ac., 3 amp. on 30-volt dc. One switch unit is actuated in each extreme toggle position. Neither unit is actuated in the center toggle position but, due to the fact that there are the two single-pole double-throw units, it is possible to have three combinations of two circuits open and two circuits closed at any time.

Each assembly is fitted with a standard AN or JAN type of panel mount bushing and toggle lever. Overall dimensions are 11/16 in. in length, 11/16 in. in width, 2⅛ in. in overall height. The maintained toggle positions are detented to provide positive feel of the position. Momentary positions are spring loaded to return to the center "off" position.

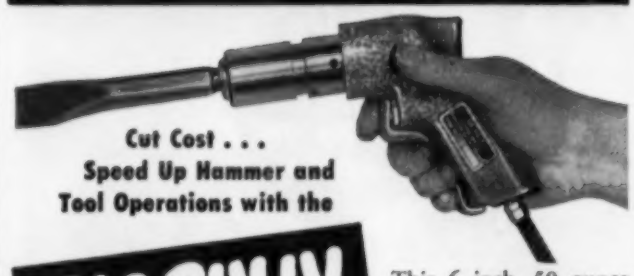
If you write maker identify as IEN - 11194

Now you can purchase steel frame and assembled hinged doors in double swinging design for application on the face of your open-front bins and shelving. The doors are reinforced on the inside to prevent warping and each pair is hung in its own rigid frame. Application can be made with any style of Equipto units manufactured by Aurora Equipment Co., 422 Cleveland Ave., Dept. IEN, Aurora, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11195

Replace Your Hammers with Air Power!



Cut Cost . . . Speed Up Hammer and Tool Operations with the

BIG BULLY AIR HAMMER

This 6 inch, 50 ounce Big Bully has Superior's exclusive metering trigger which delivers 0 to 9000 blows per minute.

14 Tools Available for 100 Different Jobs

Each tool designed specifically for use with the Big Bully. Blanks available for use in making tools of your own design.

- Scaling Tool
- Routing Chisels
- Flat Chisel
- Peening Tool
- Finishing & Forming Tool
- Star Drills
- Oil Grooving Chisel
- Sheet Metal Cutter
- Panel Cutter
- Spoon Face Chisel
- Gouge
- Wood Chisel
- Wedge Driver
- Paint Scrapper

Write for further information to . . .

SUPERIOR PNEUMATIC & MANUFACTURING, INC.

Main Office & Factory, 4758 Warner Rd., Cleveland 25, Ohio — West Coast Office, 15615 Arrow Highway, Azusa, California — Canadian Office, 347 Cannon Street, East Hamilton, Ontario

If you write maker identify as IEN - 11196

for a better grasp of any fastener problem – **CAMLOC**

QUARTER-TURN FASTENERS

MEAN QUICK ACCESS. On panels doors or covers Camloc Fasteners provide positive locking by a quarter-turn with a screw driver or wing head. Vibration-proof, Camloc Quarter-Turn Fasteners cost less to install . . . minimize replacement . . . fewer do the job.

HEAVY DUTY LATCHES

SAFELY AND EASILY OPERATED. High shear-tension capacity . . . open and close under heavy loads . . . spring-loaded handle . . . retracting shear pin . . . positive locking.

SPECIAL PURPOSE FASTENERS

SUITED TO YOUR NEEDS. In the electronic, aircraft, machinery and other fields, leading equipment manufacturers are using Camloc-designed special fasteners for quicker accessibility.

Send for catalog or call us if you have a fastener problem.

CAMLOC FASTENER CORPORATION
24 Spring Valley Road, Paramus, N. J.
WEST COAST OFFICE: 5410 WILSHIRE BLVD., LOS ANGELES, CAL.

If you write maker identify as IEN - 11197

J. I. C. WIRING BOXES of Sensationally New Design

Beautifully finished in gray baked enamel

Removable Panel Plate simplifies mounting terminal strips or other electrical equipment, and eliminates bolt holes through bottom of box. Ford, General Motors and Chrysler are some of the users of these junction boxes.

Write for literature or memo sample.

Standard sizes range from 4" x 4" x 3" to 16" x 14" x 6".

HOFFMAN ENGINEERING CORPORATION
Designers—Fabricators of Sheet Metal Enclosures
Dept. IEN-22, Anoka, Minn.

Splash-proof and Dust-proof

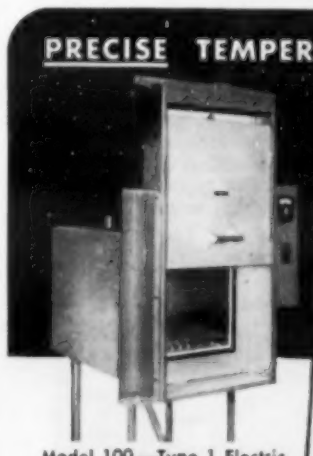
Water, oil or dust cannot enter these rugged steel wiring boxes. THEY COMPLY WITH J. I. C. ELECTRICAL SPECIFICATIONS FOR JUNCTION BOXES. No screw holes in cover and no knock-outs to admit liquids. Cover can be removed by loosening one exterior screw. Neoprene rubber gasket provides tight seal. Note external mounting feet.

Ideal for Machine Tool Wiring

Oil, chips or water in the control circuit can cause costly machine "down time". Hoffman J.I.C. wiring boxes help eliminate this trouble. Many machine tool buyers now demand that electrical controls and terminal strips be enclosed in oil-tight boxes.

If you write maker identify as IEN - 11198

PRECISE TEMPERATURE CONTROL between **200-900° F** . . . with this NEW, LOW COST Electric Oven



Model 100—Type 1 Electric Ovens, available in floor or bench mounted styles.

EXCELLENT FOR Annealing . . . Removal of Hydrogen Embrittlement . . . Core Baking . . . Preheating Magnesium Prior to Processing . . . Laboratory and industrial use where temperatures must be maintained accurately.

● Individually calibrated controllers ● 6-inch magnesia insulation minimizes thermal loss regardless of ambient conditions ● Spring loaded, counterweighted door insures positive seal despite heat expansion or wear and tear. ● Durable heavy plate, 1/16" steel jacket construction ● Simple installation. Same power source for both controller and heating equipment. 220v, 3Φ or 440v, 3Φ ● Ample heating chamber measures 15" x 15" x 36".

$925, fob Clifton, N. J.

MAF 1937

For complete specifications or information on special ovens built to your requirements, write today to Dept. IEN.

ASSOCIATED METAL FABRICATORS
Division of Jersey Sheet Metal Products, Inc.
24 SEBAGO ST., CLIFTON, NEW JERSEY

If you write maker identify as IEN-11199

this time-study saves you money!

BUSINESSES SAVE HOURS EACH DAY

you save 16 seconds every time you press a button

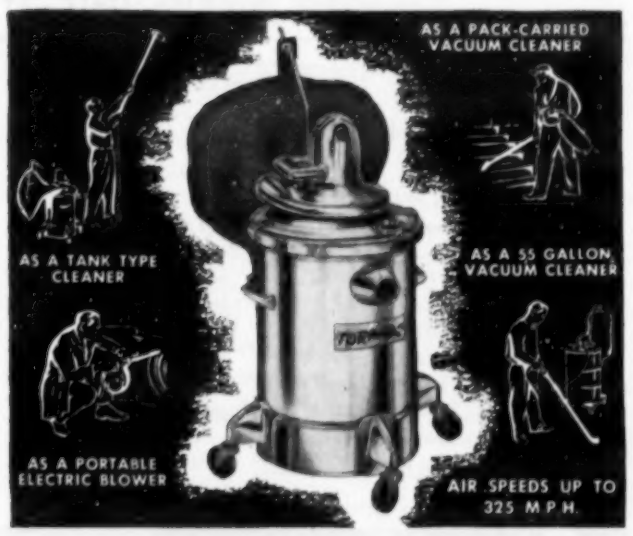
Actual time studies taken in hundreds of businesses show that an average of 18 seconds is required to make an "inside" speech contact through the switchboard. With *your own* AMPLICALL "clear line" *internal* communication system—you get *2-second speech contact* within and between departments. AMPLICALL frees busy switchboards for important outside calls—keeps personnel *on the job*, keeps talk terse—saves hours each day for the average business. AMPLICALL saves you money—pays for itself. There is a system to fit your special needs. Get the full facts today!

SEE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

ELECTRONIC
AMPLICALL
INTERCOMMUNICATION

RAULAND-BORG CORPORATION
3515-K Addison Street, Chicago 19, Illinois

If you write maker identify as IEN-11200



The NEW TORNADO®

More Versatile Cleaning From Floor to Ceiling

This new Tornado cleaner brings you even greater cleaning power and longer life . . . with air speeds up to 325 M.P.H. 3 sizes: ¾ H.P., 1 H.P. or 1½ H.P.

Tornado picks up all dirt, dust, chips, oil or other liquids without any conversion.

The powerful motor unit removes from the cover with a simple ¼ turn. The same motor unit can then be used for:

1. **A pack-carried vacuum cleaner**
2. **A powerful portable electric blower**
3. **A jumbo cleaner for use with a standard 55 gal. drum**

No matter what your cleaning job—Tornado will do it better and faster—run for hours & hours of constant duty under the worst conditions.

Write for Bulletin 660

We'll be glad to demonstrate in your company—just tell us where and when.

1/4 turn removes motor unit.
All sizes interchangeable.

Motor unit & adaptor cover fit any standard drum for doing the big cleaning jobs.

BREUER ELECTRIC MFG. CO.
5108 North Ravenswood Avenue • Chicago 40, Illinois

If you write maker identify as IEN-11202

Gage - Corrosion proof steel rules dull chromium plated for easy reading

Source: BROWN & SHARPE MFG. CO.
235 Promenade St., Dept. IEN, Providence 1, R. I.

Long wearing precision tools

Dull chromium finish, employed on these new steel rules, assists in reading the graduations in any light or at any angle. The plating also resists corrosion and staining. Number 312 flexible steel rule measures 6 in. in length and is graduated in 16th, 32nds and 64ths. Number 316 tempered steel rule is available in 6 and 12-in. lengths. Both are graduated in 8ths, 16ths, 32nds and 64ths.

If you write maker identify as IEN-11203

Motor Control - Starter relay for application on single phase motors

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Factory calibrated

Type AAR-1 designates a new relay in **which the coil is** designed to be wired across the starting winding of a single phase motor. The relay picks up, when the motor comes to speed, increasing the induced voltage in the starter windings. The new unit can be used to replace a centrifugal switch. It is particularly suited where adverse atmospheric conditions exist. Ratings range up to 5 hp. on 110/220 volts.

If you write maker identify as IEN-11204

Isolating - Vibration insulator replaces anchor bolts under machines

Source: BARRY CORPORATION
838 Pleasant St., Dept. IEN, Watertown 72, Mass.

Screw adjustment

Load capacity is to 5 ton per unit for this new Model-LM7 Leveling Barrymount. It represents further development of the smaller Model LM3 and LM5 units, previously described IEN-13661-53, for loads to a little over 2 tons per unit. Each assembly permits height adjustment to ½ in. for leveling purposes. The units are designed for assembly beneath a machine base to absorb shock and prevent "walking" so the machine need not be bolted down.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11205

Tourek
EXTREME UNIFORM ACCURACY IN SCREW MACHINE PRODUCTS

Critical Buyers Are "Turning To Tourek"

More and more critical buyers "TURN TO TOUREK" *consistently* for finer quality in SCREW MACHINE PARTS. They know these better parts cut assembly downtime to an all time low. TOUREK'S vast engineering experience and facilities can be trusted for the kind of service and cooperation you need. Get ideas, suggestions, estimates. Write today!

SEND FOR.. *useful free technical data on TOUREK Screw Machine Products. Use company stationery, please.*

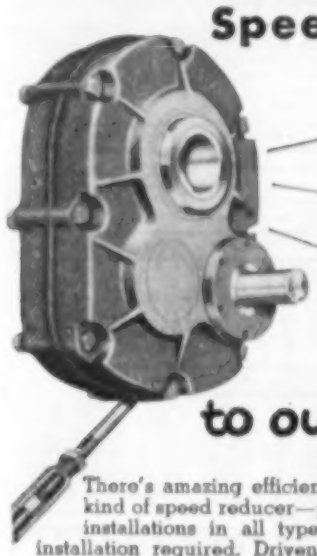
J. J. TOUREK MFG. CO.
ESTABLISHED 1920
1901 SOUTH KILBOURN AVENUE, CHICAGO 23, ILLINOIS

. . UP TO 2-5/8" DIAMETER SINGLE AND MULTIPLE SPINDLE MACHINES . .
THREADING • TAPPING • MILLING • DRILLING • GRINDING • POLISHING • PLATING • HEAT TREATING • SILVER SOLDERING

WORLD'S LARGEST MANUFACTURER OF BALL JOINTS

If you write maker identify as IEN-11206

DODGE TORQUE-ARM Speed Reducer



Delivers up to 97% of Power to output shaft!

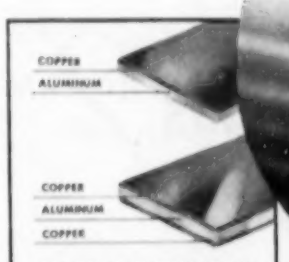
There's amazing efficiency and economy in this new kind of speed reducer—proved in tens of thousands of installations in all types of industry. No expensive installation required. Driven through any V-belt drive—stock Taper-Lock sheaves prescribed for desired speeds. Single and double reduction series, with capacities from 1 to 43 hp and output speeds from 12 to 330 rpm. Back stop and Tri-matic overload release available. Write for bulletin.

Dodge Manufacturing Corporation, 600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

If you write maker identify as IEN-11207

Many Things Copper Does ALCUPLATE® Does At Less Cost



ALCUPLATE FEATURES

- Natural copper appearance
- High electrical conductivity
- Excellent heat dissipation
- Soft-soldering surfaces
- Easy fabrication
- Light weight

***Q** How can you reduce the cost of copper or brass in your parts or products?*

***A** Get the same copper surface area and natural thickness with less copper.*

And that is *exactly* what ALCUPLATE does. ALCUPLATE is a solid layer of copper permanently clad — to one or both sides of less expensive aluminum. This gives you solid copper performance at a 15 to 30% lower cost over solid copper.

Yet, in addition to this cost reduction, ALCUPLATE provides virtually the same physical and electrical properties as solid copper.

FABRICATING PROPERTIES – ALCUPLATE can be fabricated by stamping, drawing, spinning and forming. The copper provides an ideal surface for soft-soldering operations, electroplating or other finishes.

SIZES AVAILABLE – ALCUPLATE is available in coils or cut lengths up to 1/16" thick x 13" wide and in a choice of thickness ratios and tempers.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
710 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as IEN-11208

CLEMENTS
Cadillac
PORTABLE ELECTRIC
COMBINATION BLOWER-SUCTION CLEANER

This versatile blower, available with attachments, can be quickly converted for handling a broad variety of maintenance tasks (suction cleaning, spraying, etc.) and for many special production jobs, such as preheating, bending, annealing, and soldering.

COSTS LITTLE TO BUY, COSTS LITTLE TO USE, SAVES A LOT!

CLEANS FASTER EASIER . . . BETTER

MADE IN 5 MODELS
1 H.P.
2 SPEEDS
ILLUSTRATED

Save your equipment. Remove dirt, dust, grit, filings from every crack and crevice before they damage your machinery, decrease its efficiency. You'll reduce repairs, replacements, down-time, with this powerful cleaning tool.

Ask your mill supply dealer for a demonstration, or write us for information.

"Most Useful Tool in the Plant"

CLEANS MACHINERY • MOTORS • TOOL ROOMS • STOCK BINS

CLEMENTS MFG. CO., 6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

USED BY BUSINESS AND INDUSTRY FOR MORE THAN 44 YEARS

If you write maker identify as IEN-11209

Severance CARBO-MILLS GROUND-from-the-Solid

The all-purpose CARBIDE mill at LOW cost. Use them same as you would High Speed mills or Rotary Files—Same machines—Same speeds (or higher). No more, time consuming, "kid-glove" care. Just chuck them up in your regular equipment and watch these RUGGED CARBO-MILLS go to work!

SOLID CARBIDE CUTTING HEADS

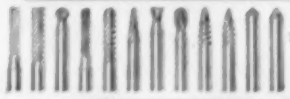
CARBO-MILLS ASK NO SPECIAL FAVORS

3/32" SHANKS

7 Standard Numbers, featuring REAL cutting teeth to remove stock faster over long periods of use—as well after regrinding as when new.

CARBO-MILLS by the ORIGINATOR of Ground-from-the-Solid Mills

IN PORTABLE TOOLS



1/8" SHANKS
12 STANDARD NUMBERS
THE POPULAR WORK BENCH SET

NO PROBLEM OF TOOTH CHIPPING OR BRAZE-FAILURE

CARBO-MILLS PREFERRED BY OPERATORS!

IN MACHINE TOOLS

1/4" SHANKS

20 STANDARD NUMBERS

20 Standard Numbers (only 9 illustrated) cover the widest possible range of uses. Don't continue losing valuable time and money; replace your less efficient Rotary Files with these longer lasting, faster cutting, stamina possessing, CARBO-MILLS at the earliest possible moment!

LAST UP TO 75 TIMES LONGER THAN ROTARY FILES OF HIGH SPEED

DIE MAKERS! ASK FOR THIS SET

Furnished to you in a sturdy wooden case; Di-cor Set No. 40 is a set of 8, ¼" shank CARBIDE mills designed and instituted specifically for you, the Tool and Die Maker. Specially selected shapes—Special tooth patterns and cuts for all types of precision Tool and Die work. You will ply your skills easier and faster than ever before with these personal finishing mills. These CARBIDE mills need absolutely no coddling and will win their way to the the most favored spot on your Work-Bench! Send for complete information and prices today! Ask for Leaflet No. 645

GROUND from the Solid

REGRINDING—Due to CARBO-MILLS being made of Solid Carbide repeated savings are made possible through successive regrinds.

INVESTIGATE NOW!

FOR COMPLETE INFORMATION AND PRICES SEND FOR BULLETIN CM.

SEVERANCE TOOL INDUSTRIES, INC.

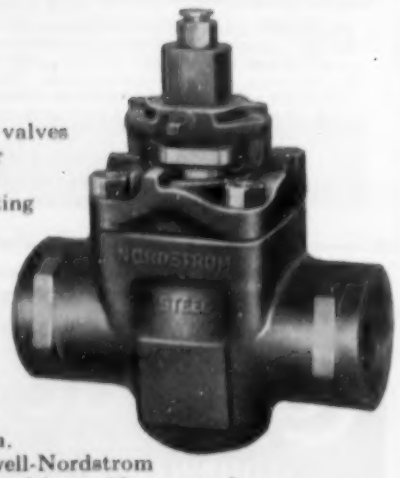
740 Iowa Avenue • Saginaw, Michigan

If you write maker identify as IEN-11210

Does Your Plant Have Lines Carrying Corrosive Liquids?

Then You Should Know About

Rockwell-Nordstrom *Valves*



Rockwell-Nordstrom valves resist corrosion better than other valves because the vital seating area of a Rockwell-Nordstrom valve is never exposed to the line fluid. A thin film of lubricant covers the entire seating surface preventing corrosive fluids from acting upon this critical area.

In addition, Rockwell-Nordstrom valves are manufactured in a wide range of special corrosion-resistant metals.

For longer life and trouble-free valve operation, install corrosion-resistant Rockwell-Nordstrom valves at your plant.

There's a new bulletin prepared by Rockwell Manufacturing Company describing corrosion-resistant valves for industrial services. Mail the coupon below for your free copy today! Rockwell Manufacturing Company, Pittsburgh 8, Pa.

Rockwell-Nordstrom Valves

Lubricant-Sealed for Positive Shut-Off

Canadian Licensee: Peacock Brothers Limited.

ROCKWELL MANUFACTURING COMPANY 5432F
Pittsburgh 8, Pa.

Please send me Rockwell-Nordstrom Valve Catalog V-217.

Name_____ Title_____

Company_____

Street_____

City_____ Zone____ State_____

If you write maker identify as IEN-11212

Floors - Portable magnesium ramp makes roadway from ground to platform

Source: NATIONAL LIGHT METALS & PLASTIC CORP. Dept. IEN, Caro, Mich.

Takes place of loading platform

Length ranges from 20 to 32 ft. and width is 4 to 70 ft. in this new line of wheel mounted magnesium ramps. The wheels retract by operating a hand hydraulic pump. A telescopic tow bar attaches to a truck to move the unit from one location to another. Load capacities range from 5,000 to 15,000 pounds. The ramp is constructed of magnesium plates and structural members. It is fitted with a locking device to assist in securing it in a railroad car door opening.

If you write maker identify as IEN-11213

Handling - Pivoted steel hopper for small parts in original containers

Source: CHAS. WM. DOEPKE MFG. COMPANY 8853 Blue Ash Road, Dept. IEN, Rossmoyne, Ohio

Balanced to roll over easily

Small parts can be dispensed from their original containers in assembly and production departments with the aid of this new NesTler Rollover Hopper. A box or keg, filled with parts, can be positioned after its cover has been removed. A retaining lid is secured and the hopper is rotated on its pivot trunnions. The parts then feed from the open container through the lid gate to the tray area at the lower front.

If you write maker identify as IEN-11214

Snow-Rem liquid snow plow wax, manufactured by Speco, Incorporated, 7308 Associate Ave., Dept. IEN, Cleveland 9, Ohio, is now supplied with a rust inhibitor, known as Speconite, to retard corrosion. The wax can be applied by brush or spray on snow splow blades, moldboards and wings to prevent snow from sticking and to promote smooth sliding action. The wax is supplied in 1 and 5-gal. cans, 55-gal. drums.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11215

SAVE MONEY, MACHINE TIME, MATERIALS with OUR LOW-COST SPACER TUBES

sleeves — bushings — ferrules

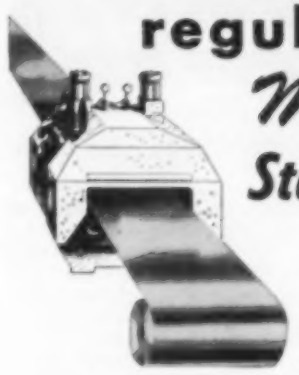
ORDER DIRECT and SAVE— FREE CATALOG, PRICE LIST

Write for your copy!

Replace costly iron pipe, tubing, machined parts. Rolled split steel spacers come ready to use—no waste. Hundreds of lengths, diameters, gauges immediately available. Write for FREE catalog, price list TODAY!

FEDERAL-MOGUL CORP.
11069 SHOEMAKER
DETROIT 13, MICHIGAN

If you write maker identify as IEN-11216



regular use of *MicroRold®* *Stainless Sheets* SAVES MONEY!

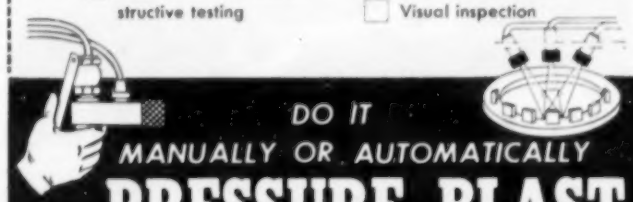
Stainless sheets are usually ordered by gauge number—with permissible A.I.S.I. thickness variation of plus or minus 10%—but are sold on a weight basis. Thus, you may order 18 gauge, needing about .0475" thickness, and receive .052" thickness. But MicroRold may be held to a 3% plus or minus tolerance; and you may order by gauge number, specifying that it be rolled on the "light side" of the gauge range. While these savings may not be apparent in every single sheet of MicroRold, the weights will average less than the theoretical when figured over a period of time. These savings can be substantial in your annual profit picture.

Washington Steel Corporation
WASHINGTON, PENNSYLVANIA

If you write maker identify as IEN-11217

which of these FINISHING PROBLEMS are yours?

- ☐ Soldering bond
- ☐ Decorative effects
- ☐ Paint adhesion
- ☐ Plating bond
- ☐ Anodized film adherance
- ☐ Satin finishes
- ☐ Instant wetability
- ☐ Welding bond
- ☐ Phosphate coating bond
- ☐ Brazing bond
- ☐ Preparation for non-destructive testing
- ☐ Lubrication retention
- ☐ Surface activation
- ☐ Stress relief
- ☐ Vinyl coating bond
- ☐ Ceramic coating bond
- ☐ Smoother surfaces
- ☐ Etching
  - ☐ Plastic
  - ☐ Metal
  - ☐ Glass
- ☐ Elimination of galling
- ☐ Reduction of friction
- ☐ Visual inspection



DO IT MANUALLY OR AUTOMATICALLY

WITH **PRESSURE BLAST** WET BLASTING

TWO SPEED

This ad is your coupon. Check off your problem (s) and mail today for free illustrated literature . . . Application data . . . case history information!

THE **CRO-PLATE COMPANY** INC.
747-3 WINDSOR ST. HARTFORD 5, CONN.

If you write maker identify as IEN-11218

Buy the can that's GUARANTEED ...*Witt!*

WITT CANS are guaranteed to outlast 3 to 5 ordinary Cans. WITT dares to make that guarantee, because WITT CANS are designed to last longer . . . constructed to give years of rugged service. That's why WITT CANS survive severe treatment that soon wrecks ordinary cans. Compare WITT CAN features with those of other Cans on these points:

- *Straight sides*
- *Deep rolling corrugations*
- *Sturdy lid*
- *Heavy gauge steel*
- *Structural steel bands*
- *Hot dip galvanizing*
- *Pinch-proof handles*

You'll see why WITT CANS are guaranteed to outlast 3 to 5 ordinary Cans . . . why, regardless of price, WITT CANS are your best buy!

Witt Cans WITT CANS HAVE THE "RIGHT" ANGLE *"Originators of the Corrugated Can"*

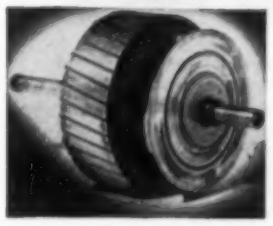
THE WITT CORNICE CO. 2133 WINCHELL ST., CINCINNATI 14, OHIO

If you write maker identify as IEN - 11219

CLEANS ELECTRIC MOTORS

WITHOUT DISASSEMBLY . . .

REMOVES DIRT and GREASE WITH FILM-FREE RESULTS



Brulin Solvent Degreaser is harmless to rubber, and because it is a non-conductor of electricity, motors may be cleaned by immersion and by running while immersed. Dirt and grease are removed with no film deposited. Periodic maintenance of motors by cleaning prevents build-up of "varnishes" common in electric motors. Non-toxic and relatively non-inflammable. Ideal for maintenance of motors used in air-conditioning and circulatory systems where air flow deposits dirt and dust due to magnetic attraction.

Write today for more complete information

BRULIN Solvent Degreaser

BRULIN & COMPANY, INC.
2938 COLUMBIA AVENUE · INDIANAPOLIS 7, INDIANA

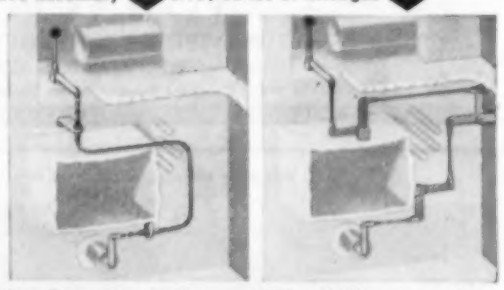
If you write maker identify as IEN - 11220

IMPROVED OPERATION OF LITERALLY HUNDREDS OF MECHANICAL PRODUCTS HAS BEEN EFFECTED WITH ACCO TRU-LAY FLEXIBLE PUSH-PULL CONTROLS

Tru-Lay Push-Pull Controls provide POSITIVE REMOTE-ACTION over long or short distances . . . with fixed or movable anchorages . . . for light loads or loads up to 1,000 lbs., and these units are frequently and successfully used in conjunction with Electric, Hydraulic and Air Controls.

Flexibility makes it possible to snake around obstructions . . . simplifies installation . . . reduces the number of working parts . . .

to give you this simple and effective assembly ↓ . . . rather than this complex (and expensive) series of linkages ↓



Positive Remote-Action and Flexibility, together with Precision and Long Life, explain why TRU-LAY PUSH-PULLS serve designers and users equally well in improving machine operations, whether the application is on such severe service jobs as Bulldozers, Power Shovels and Steel Mill Machinery, or on such light duty work as Photographic Equipment, X-Ray or Business Machines.

Immunity to Vibration makes these TRU-LAY PUSH-PULLS ideal as Remote Controls on shakers and other vibratory products.

Complete Protection Against Dirt and Moisture is a big factor in the use of this unit on machinery in Coal Mines, Cement and Steel Mills, Oil Fields and in many other industries.

Corrosion-Resistance of the unit, plated or with Stainless Steel construction as required by the use, has led to many applications in the Marine Field . . . salt water or fresh. Supplied with a rubber cover the unit operates effectively even when conduit is COMPLETELY IMMERSED.

Lubrication of the inner working member is for life.

Temperatures as low as −70° F. will not hinder the proper operation of this unit, and it is throughly effective even in the extreme high temperatures encountered on Jet Engine, Furnace Door and Glass Furnace Damper control applications.

This **IDEA FILE** *will answer most of the questions you may have in mind as to how you might make additional applications of this versatile and dependable tool. Write for a copy, without obligation.*

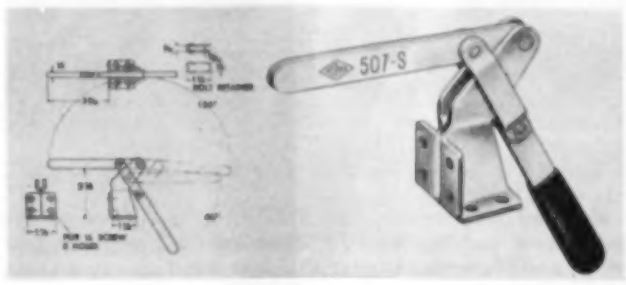
DATA FILE

ACCO
AUTOMOTIVE and AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
601 Stephenson Bldg., Detroit 2
2216 South Garfield Ave., Los Angeles 22 · Bridgeport 2, Conn.

If you write maker identify as IEN - 11222

Clamp - Toggle design for fixture, clears work area in open position

Source: DETROIT STAMPING CO.
350 Midland Ave., Dept. IEN, Detroit 3, Mich.



Hugs the fixture

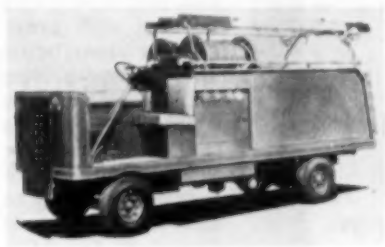
The holding bar, in this new Model 507-S toggle clamp, lies in horizontal position and away from the work area when the handle is moved through a 60 deg. arc to "open" position. The bar moves back, through a 185 deg. arc to horizontal holding position, when the handle is returned downward to lock a work piece. The clamp assembly weighs 12 oz. and provides for holding pressure to 600 pounds. Its base can be mounted vertically or horizontally.

A U-shaped holding bar, Model 507-U, can be specified in place of the solid bar shown in the illustration. The handle is equipped with a vinyl plastic grip. The new model is the tenth basic style in the Destaco line to hold sheets or strips of metal during welding, drilling, processing, assembly and to secure sheets of plastic for laminating, cementing.

If you write maker identify as IEN - 11223

Extinguishing - Engine drive truck delivers a fire smothering water fog

Source: FOOD MACHINERY & CHEMICAL CO.
Dept. IEN, Lansing 4, Mich.



Details on request

New truck, designed particularly for plant use, can be maneuvered through ordinary factory aisles to bring it into position for power delivery of high pressure fog to cool, smother and isolate flames in flammable liquids and in any burning materials except magnesium. The fog is discharged at the rate of 20 gpm. with pressure at 600 lb. at the nozzle. Two fog lines are mounted on spring loaded reels and are equipped with John Bean high pressure fog guns. Each can be handled by one man and quickly adjusted for application from a distance or close-up.

A 300-gal. tank holds enough water for 20 min. of normal fire fighting. The truck also is equipped to pump water from a plant line or from a source such as a pond or cistern. Overall dimensions are 140 by 48 by 79 inches. The wheel base measures 76 inches. Turning radius is within 15 feet. The engine rates 98 hp. and is connected to the truck drive through a transmission that provides four forward speeds and a reverse. Top speed is 25 mph. A "bucking head" at the front end will push through aisles blocked with obstacles.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11224

FASTER, MORE ACCURATE INSPECTION WITH

FLASH-O-LENS Illuminated Magnifiers

In industrial inspection departments, on production lines, in foundries and laboratories, wherever close visual inspection is important, FLASH-O-LENS gets the job done better, faster. FLASH-O-LENS spots minute defects by spotlighting the area it magnifies.

Battery models, powered by standard flashlight cells, and AC-DC plug-in models are available with 5, 7, 20 or 40 power precision lenses to meet a wide range of inspection needs. Prices start from $10.65.

PIKE REG. U. S. PAT. OFF.

WRITE TODAY for literature showing applications, types, prices.

E. W. PIKE & COMPANY, Inc.
492 NORTH AVENUE ELIZABETH 3, N. J.

If you write maker identify as IEN - 11225

MERRILL MATERIALS HANDLING DEVICES

3-M-2

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 11226

FOR ACCURATE CONTROL OF AIR

MASONEILAN No. 71 Reducing Valve

Built to maintain accurate control of air pressures under the toughest conditions, this sturdy reducing valve is a real money saver. Compact. Easy to service. It has large capacity . . . instant response. Its simple design and sturdy construction reduces maintenance to a minimum.

Initial pressure up to 250 lbs., reduced to any pressure from 5-60 lbs., 60-100 lbs. Sizes ¼" to ½". Pressure gauge included.

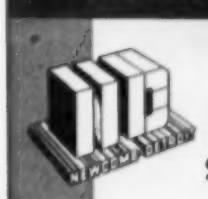
Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN
REGULATOR CO.
1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

If you write maker identify as IEN - 11227

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



INDUSTRIAL OVENS
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SPRAY BOOTHS
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PARTS WASHERS
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HEAT and AIR SYSTEMS

ESTABLISHED 1912
• DETROIT DIVISION
• GRAND RAPIDS DIVISION
• NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN-11228

H & K Perforated Holes

This mouse hole screens out "foreign" matter just as H & K perforated metal cleans and sizes hundreds of materials in processing and manufacturing. The mouse made its hole of the proper size. You can select from a wide range of sizes and shapes the perforations which will best serve your needs.

Our perforations are accurate to size, uniformly spaced and can be furnished in any metal you want, as well as in plywood, hardboard, plastic and other materials available in sheet, plate or coils.

We invite those requiring perforated material to ask for our catalog No. 62 and to remember that "If it can be perforated H & K can perforate it."

The Harrington & King Perforating Co.
5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

If you write maker identify as IEN-11229

NEWCO WIRE ROPE CLAMP WILL OUTLAST ANY KNOWN GRIP, CLIP OR THIMBLE!

- Holding Efficiency 95% to 100% of Catalog List
- Easily, Quickly Installed
- Easily Adapted to Making Slings

Users of Newco Clamps report two to three times longer life. Why? They're built stronger! Bearing surface is 5 to 10 times greater than pressed steel thimble. Patented locking construction automatically forces clamp to hold tighter when load gets heavier—with maximum protection to wire rope. Impossible to shear bolts off; rope pressure pushes keying sections together, prevents movement of bolts up and down. Users report greater holding efficiency than "U" bolt type clips. Assembly includes two sections, bolts, *no clips*. Simple as a-b-c to install with no special tools required.

This Newco Clamp has been on the job steadily on a crane, using a magnet, for Schiller Park Compressed Steel Corp. for many months without any noticeable wear.

wire rope NEWCO CLAMP

GET ALL THE FACTS! See your Distributor or write today for complete specifications, details and prices on the amazing Newco Clamp!

NEWMAN MANUFACTURING & SALES COMPANY
Dept. 101, 205 Westport Road, Kansas City 11, Mo.

If you write maker identify as IEN-11230

NEW CATALOG OF WELDING FACILITIES

Twenty-four page booklet describing American Welding facilities that are available to you. Lists welding, machining and fabricating equipment and services available to manufacturers. Photographs of plant indicate American Welding's capacity and wide versatility.

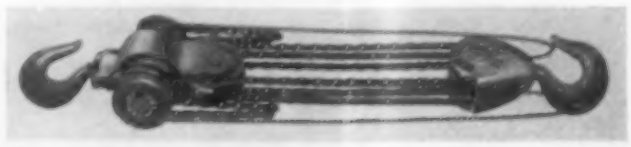
Write for free copy.

The American Welding & Manufacturing Co.
160 DIETZ ROAD • WARREN, OHIO

If you write maker identify as IEN-11231

Hoist - Hand chain design in eleven ratings from ½ to 25 ton

Source: AMERICAN CHAIN & CABLE CO.
929 Connecticut Ave., Dept. IEN, Bridgeport 2, Conn.



For general duty

Enclosed construction, sealed bearings, assembly of the hand wheel and Weston load brake and load wheel in protected positions, characterize this new hand operated chain hoist. Application can be made under any conditions without need for maintenance attention. The load wheel is reversible so its formed pockets can be employed to take wear at either end. The planetary drive gearing is enclosed in an oil tight chamber. The load hooks are made of alloy steel and are designed to open before fracturing in the event of excessive overload. Both hooks are mounted in swivels. The bottom one rides on a Timken thrust bearing.

Smallest, ½-ton assembly, has 11¾-in. minimum distance between the hooks. The largest, 25-ton unit, measures 66 inches. Standard lift is 8 to 12 feet. Weight ranges from 45 to 1,100 pounds. A non-fouling hand chain guide prevents gagging and permits use of the hand chain at any angle.

If you write maker identify as IEN-11232

Cutting - Slitter and rewinder for fabrics, foil, paper, plastics

Source: CAMERON MACHINE CO.
61 Poplar St., Dept. IEN, Brooklyn 2, N. Y.

Multi-purpose design

Model 500 is a new multi-purpose slitting and roll rewinding machine with provision for shear, score or razor-type slitting so the machine can be adapted to the slitting method best suited for a given material or can be changed to handle a different material. Operation is at speeds to 2,000 fpm., working from a parent roll to 62 in. in width and rewinding to 20 in. in diameter.

Sensitive automatic controls maintain correct density in the rewind rolls as the slitting operation proceeds. Built-in constant tension and electric side register controls can be specified.

If you write maker identify as IEN-11233

New bushing with a square broached hole to fit and drive a tap and a cylindrical exterior to fit in a tap holder is available from Byco Industries, 2300 E. 31st St., Dept. IEN, Minneapolis 6, Minn. Centering set screws are provided on two sides of the bushing to lock the tap. A single set screw, through a standard holder, secures the bushing in place. The new unit fits taps from No. 0 to 1⅜-in., pipe taps from ⅛ to 1-inch. Five outside diameters are from ½ to 1½ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11234

ELECTROSTAKE CUTS COSTS at Eastman Kodak

The Eastman Kodak Company uses ELECTROSTAKE—the automatic solenoid-operated staking machine—to stake shutter parts for Brownie Hawkeye cameras. ELECTROSTAKE presses the assemblies together—then *automatically* delivers the staking blow. Better control of the impact cuts scrap . . . and because ELECTROSTAKE is faster and simpler to use, operators are able to stake far more shutter parts than they could on foot-powered machines.

Delivers impacts up to 3500 lbs.—hold-down pressure can be pre-set from 0 to 20 lbs. Economical to buy, operate and maintain. Plugs into any 115 V., A.C. outlet.

Write — or phone Bigelow 4-6370 — for folder showing complete line of Black & Webster electric production tools.

BLACK & WEBSTER, INC.
Dept. 17, 445 Watertown Street, Newton 58, Mass.
Solenoid-operated Production Tools

If you write maker identify as IEN-11235

REVOLUTIONARY NEW IDEA IN SPLICING...

"SCOTCHCAST!"

Now you can turn out completely insulated and sealed cable splices *in minutes* with "Scotchcast" Electrical Embedment Resin No. 4 in the new ready-to-use "Unipak".

"Unipak" is a new single-package envelope containing famous "Scotchcast" Resin and hardener. To prepare the "Scotchcast" for use, you simply squeeze the package to mix—then, pour the activated resin and hardener into the splice mold. "Scotchcast" quickly cures into a tough, protective casing that resists acids, alkalies, solvents, and oils—has excellent adhesion to most metals, plastics, and conductors.

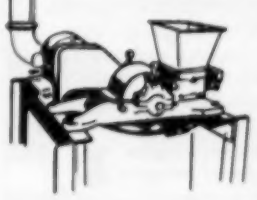
We'll be glad to send you complete information on this revolutionary new idea in splicing—just mail us a post card today.

SCOTCHCAST Electrical Embedment Resin

The term "Scotchcast" is a registered trademark of Minnesota Mining and Manufacturing Company, St. Paul 6, Minn. General Export: 122 E. 42nd St., N.Y. 17, N.Y. In Canada: London, Ontario, Can.

If you write maker identify as IEN-11236

In this complete MIKRO "package"—combining MIKRO-PULVERIZER (or MIKRO-ATOMIZER), MIKRO-AIRACON and MIKRO-COLLECTOR—three separate functions—pulverizing, air conveying and dust collection, are welded into a coordinated and completely automatic processing system which eliminates the cost of manual handling.



The service and facilities of the MIKRO Laboratory are at your disposal, without obligation, to help obtain the best answer for you.

Write for illustrated descriptive literature.

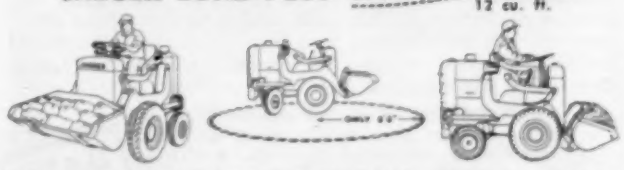
MIKRO
PULVERIZING MACHINERY DIVISION
METALS DISINTEGRATING COMPANY, INC.
42 Chatham Road Summit, New Jersey
PULVERIZING • AIR CONVEYING • DUST COLLECTION EQUIPMENT

If you write maker identify as IEN-11237

REACHES HIGHER, FARTHER to bring you lower costs

Your Load-Plus Auto-Scoop will do jobs that other scoop loaders can't handle. Dumps over edges of trucks, bins or hoppers up to 6'8" high, reaches to 2'7", to place loads to best advantage. Simple, hydraulic boom and bucket control. Note other performance advantages. Write for Catalog L12-4.

JAEGER LOAD-PLUS auto-scoop 12 cu. ft.



10% more power (33 hp @ 1800 rpm); 20% greater lifting capacity (1200 lbs.).

5" shorter turning radius (6'6"). Up to 25% faster speeds (to 13.88 mph in reverse, 7.66 forward).

Low bucket tilt-back assists full bucket loading, permits carrying low (4½" from ground).

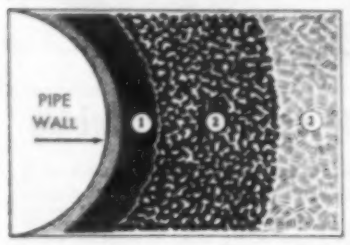
1 cu. yd. Load-Plus available for bigger work.

THE JAEGER MACHINE COMPANY, 614 Dublin Avenue, Columbus 16, Ohio

If you write maker identify as **IEN - 11238**

GILSULATE®

the modern Triple-Zone insulation for hot underground pipes. Lowest cost per installed linear foot.



Zone 1: First line of defense against heat loss, corrosion, moisture: a dense semi-plastic core fused on by pipe's own heat.
Zone 2: Second line of defense against heat loss and water: a sintered zone of Gilsulate particles.
Zone 3: A zone of unfused Gilsulate providing final margin of thermal insulation with high load-carrying capacity.

Gilsulate granules fuse into lifetime protection on hot underground pipes; keep them insulated, water-proof, corrosion-proof, root-proof, acid/alkali-proof.

Gilsulate is easy to use:
1. Pour Gilsulate granules out of bag onto pipe.
2. Tamp down and backfill: *the job is insulated!*

Gilsulate has been tested in scores of the country's largest and most important installations. It needs no sleeves or mechanical sheaths. It requires no mixing or special handling. It can't be punctured, doesn't require removal of rocks from backfill. It can't tear or puncture pipe since it contracts and expands with the pipe.

Write for descriptive literature

AMERICAN GILSONITE COMPANY
134 West Broadway, Salt Lake City 1, Utah
or 1145 E. Jersey St., Elizabeth 4, N. J.
Affiliate of Barber Oil Corporation and Standard Oil Company of California

If you write maker identify as **IEN - 11239**

Look To The Leader For Lubricating Devices

GITS

40 Years' Leadership

Yes, for 40 years GITS has been setting the standard for industry... solving tough lubricating problems...earning the confidence of manufacturers . . . it's the reason people say, "Call GITS first".

Low Cost

Yes, GITS oil cups can do a complete lubricating job for you . . . prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production . . . and GITS oil cups cost so little.

World's Largest Selection

Yes, only GITS can offer you such a wide range of standard stock sizes. From *just one* source you can get *all* lubrication devices in *any design* for *any purpose.*

Consistent Top Quality

Yes, GITS is known for uniform quality in design, materials and machining . . . this means constant, dependable performance for you. Inferior products can cost you time and money. Demand the best ...get GITS.

Write Today for **FREE CATALOG** *No. 60 A*
Use it as your handy reference for lubricating devices

Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges, Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod Styles. Threaded or Drive-Type, Elbow or Straight.

GITS BROS. MFG. CO.
1854 S. Kilbourn Ave. Chicago 23, Ill.

If you write maker identify as **IEN - 11241**

Elevator - Portable hydraulic to handle loads between two levels

Source: RAYMOND CORPORATION
35-126 Madison St., Dept. IEN, Greene, N. Y.

Bulletin, "Portable Dock"

Railroad cars or commercial trucks can be loaded and unloaded from ground level with this new Portable Loading Dock. Work can be handled in the shop from one elevation to another to a maximum lifting height of 56 inches. The elevator is operated by hydraulic pressure developed by a motor driven pump operating on a battery, or on connection to a power line, as specified. Construction includes trailing wheels mounted on hinged outrigger brackets so the unit can be folded for storage.

If you write maker identify as **IEN - 11242**

Protecting - Aluminized clothing duck or asbestos, to reflect heat

Source: AMERICAN OPTICAL CO.
12 Mechanic St., Dept. IEN, Southbridge, Mass.

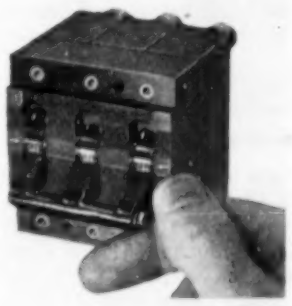
Details and prices upon request

Aprons, coats, cape sleeves, coveralls, leggings, hoods and helmets, spats, mittens, overalls, pants are representative items of protective clothing to employ a new aluminized fabric to reflect 90 per cent of radiant heat. The new process to aluminize the fabric makes the metal an integral part of the cloth to permit flexing without cracking or peeling. The herringbone weave is considerably lighter in weight than the standard basket weave cloth.

If you write maker identify as **IEN - 11243**

Circuit Breaker - For 400 cycle ac., provides time delay magnetic tripping

Source: HEINEMANN ELECTRIC CO.
518 Plum St., Dept. IEN, Trenton 2, N. J.



Bulletin T-3301

Single, two-pole and three-pole assemblies, the latter two in companion trip design, have been added to the company's line of hydraulic magnetic trip circuit breakers for application in 400-cycle ac. circuits. The operating principle in which current capacity, minimum and instantaneous trip points are constant without reference to ambient temperature, is employed in the unit.

Current rating ranges from 100 milliamperes to 50 amperes. Vibration resistance is to 10 G. Operation can be maintained between minus 55 and plus 71 degrees Centigrade.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as **IEN - 11244**

Drill Holes within .001" Accuracy with the Master Optical CENTER LOCATOR

Speediest—Simplest—most accurate method of locating centers and drilling holes. For a decade, machinists have been drilling and spacing holes with the Center-Locator to within .001". Just the thing for drilling round holes in thin material . . . avoiding drill run-outs . . . counter-boring holes with an ordinary drill. Makes your drill press do the work of a jig boring machine!

Easy to operate: Simply lay out your work with a height gauge, locate center through the powerful magnifier, then replace the magnifier with any of 16 drill bushings furnished.

38.50 postpaid or from your dealer. Unconditionally guaranteed.

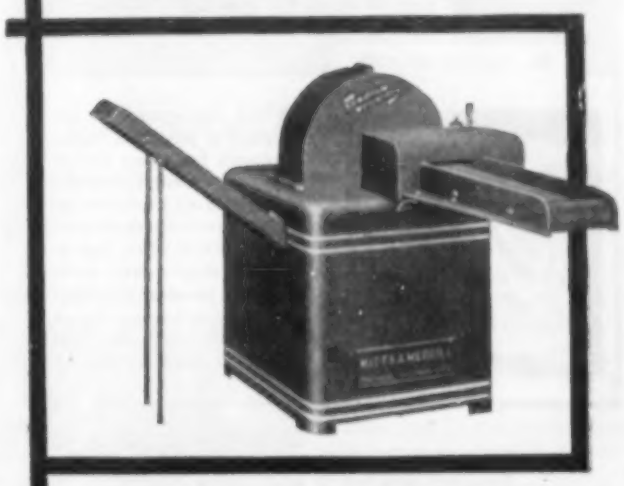
Bulletin on request

MASTER SPECIALTY CO. Inc.
3725 Monitor Avenue
Minneapolis 16, Minnesota

Affiliated with Specialty Products Co.

If you write maker identify as **IEN - 11245**

M&M AIR-FLUFF PAPER SHREDDER



The Air-Fluff Paper Shredder is an outstanding machine for use in the commercial manufacture of paper excelsior. Blueprints, letters and confidential records are speedily, safely and efficiently destroyed. Built in 3 sizes ranging in capacity from 200 to 2500 pounds per hour. Each machine can be adjusted to cut widths of 1/8", 3/16", 1/4", or 3/8". Write for descriptive literature.

MITTS & MERRILL
1014 South Water • SAGINAW, MICH.

77

If you write maker identify as **IEN - 11246**

The Spray Gun INDUSTRY PREFERS

Model P-JGA-502
$32.00
F. O. B. Toledo, Ohio

The DeVilbiss P-JGA spray gun is a high speed, large capacity, production-type gun of exceptionally compact design. Its light weight, comfortable balance and easy action minimize fatigue. Has extra-capacity to handle even the heaviest spraying requirements. Sprays any finishing material. Can be fitted with various nozzles to produce a wide variety of spray patterns for regular and special uses. Write for full details.

DEVILBISS THE DEVILBISS COMPANY
Toledo, Ohio

Santa Clara, Calif. • Barrie, Ontario • London, England

If you write maker identify as **IEN - 11247**

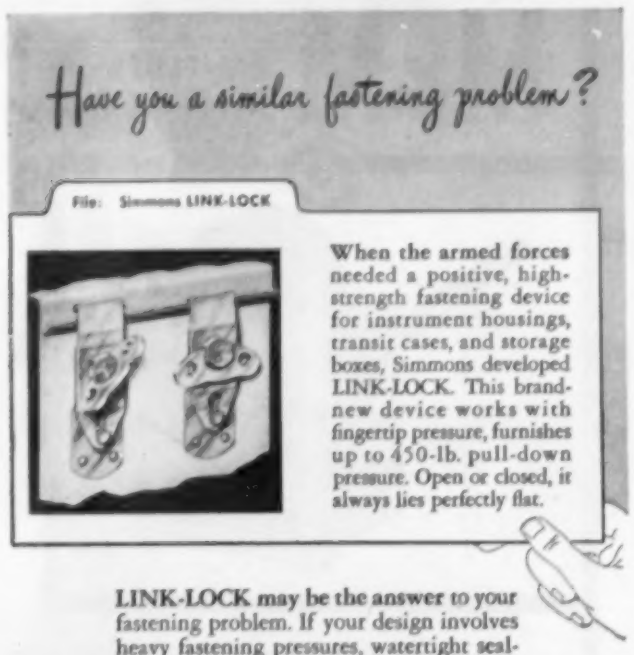
Brainard Strapping Tape
SPEEDS PACKAGING AND REINFORCING

• Streamline your package closing, reinforcing, bundling, holding, and palletizing with Brainard Strapping Tapes—either pressure-sensitive or gummed. Brainard offers a complete line of dispensers, like the hand dispenser shown above, which permits fast tape application, holds rolls up to 8" in diameter and has a patented corrugated cut-off blade. Brainard's complete Strapping System includes steel strapping and strapping tapes—assuring you of unbiased recommendations.

Brainard
STEEL DIVISION
SHARON STEEL CORPORATION

For booklet write:
BRAINARD STEEL DIVISION
Dept. II-10, Griswold Street
Warren, Ohio

If you write maker identify as IEN - 11248



LINK-LOCK may be the answer to your fastening problem. If your design involves heavy fastening pressures, watertight sealing, high strength, resistance to impact, write for LINK-LOCK DATA SHEET.

Simmons Fastener Corporation, 1758 No. Broadway, Albany 1, New York

Simmons — LINK-LOCK, QUICK-LOCK, SPRING-LOCK, ROTO-LOCK — FASTENERS WITH USES UNLIMITED

If you write maker identify as IEN - 11249

Low-cost case marker pays for itself in weeks...saves thousands of $ every year

ROLACODER Imprinter attaches to conveyor or case-sealer

Now you can do away with that costly extra operation for manual rubber-stamping or stencilling of code-dates, lot numbers, contents descriptions, etc. on cases . . . or reduce big inventories of completely printed cases . . . and save thousands of dollars annually. Use an inexpensive ROLACODER machine to mark your cases automatically on the production line. Compact, precision-made ROLACODER is friction-operated, self-inking—makes single, accurately located imprint on each case to register with other copy. Uses quick-change rubber type or dies, holds 8-hour ink supply. Different models available to imprint top, ends, sides of small or large boxes, cartons, cases, other packages.

Write for descriptive literature

Gottscho — ADOLPH GOTTSCHO, INC. — Hillside 5, N. J. — 50 Years of Leadership

In Canada: RICHARDSON AGENCIES LTD., Toronto & Montreal

If you write maker identify as IEN - 11250

ALGRIP SAFETY FLOORING PAYS FOR ITSELF IN LOWER INSURANCE COSTS

Crippling accidents that cut production, hurt morale and push insurance premiums too high, can be stopped quickly, simply, permanently in any plant with ALGRIP. For ALGRIP Abrasive Rolled Steel Floor Plate installed in danger areas ends accidents at once and brings insurance costs down fast.

Hundreds of tiny abrasive particles are impregnated *to a controlled depth of penetration* into each square foot of ALGRIP's tough steel plate giving it a "grinding-wheel" grain surface that stays non-slip even when wet or splashed with oil—even on steep inclines! And ALGRIP's surface never becomes smooth because wear only exposes new gripping particles . . . an exclusive ALGRIP safety feature.

Investigate ALGRIP now. You'll find it pays for itself in insurance savings.

Send today for full details on how ALGRIP *can save money for you. There's no obligation.*

A.W. ALGRIP *Abrasive Rolled Steel Floor Plate*

UL — ALAN WOOD STEEL COMPANY, CONSHOHOCKEN, PA.

Please send free booklet AL-3 on savings from safety with ALGRIP

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

If you write maker identify as IEN - 11251

Testing - Electric tube furnace to find carbon and sulfur in metals

Source: BURRELL CORPORATION
2223 Fifth Ave., Dept. IEN, Pittsburgh 19, Pa.

Bulletin 310

Model H designates a new line of high temperature electric tube furnaces for combustion application in determination of carbon and sulfur in ferrous and non-ferrous metals. Three sizes take 1, 2 or 4 tubes to 1½ in. in outside diameter. Each has a standard 9-in. heating chamber. Construction is in steel with gray hammertone finish. Tube holders are built in. Electrical connections are enclosed. The housing opens from the front for inspection, parts replacement and servicing.

Large air space, between the inner and outer housings, provides for cool operation. Brief heat up time is obtained through a combination of silicon carbide elements, a transformer and housing insulation. Working temperatures can be changed quickly, either up or down. Continuous operation, to 2,650 deg. F., can be maintained satisfactorily. Operation is on 110 or 220-volt 60-cycle ac.

If you write maker identify as IEN - 11252

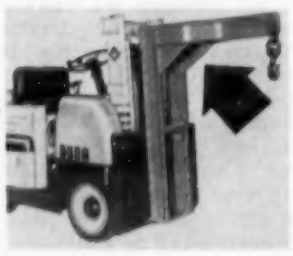
Insulating - Liquid resin for dip application on tool handles

Source: INSL-X SALES CO.
26 Rittenhouse Square, Dept. IEN, Ardmore, Pa.

Bulletin E-33

Compound E-33 is a new liquid resin. It air dries, following dip application, on the handles of tools that require insulation against electric transmission. The liquid is chemically inert. It will not corrode or injure equipment to which it is applied. It is not damaged by exposure to oil, grease, ordinary acids, alkalis. Three coats, applied about an hour apart, are recommended to protect against contact with a 110 or 220-volt circuit. Dielectric strength dry is 1,200 to 1,500 volts per mil. Two available colors are red and black.

If you write maker identify as IEN - 11253



New crane arm has been added to the list of attachments for use on its fork lift truck by Buda Company, 15401 S. Commercial St., Dept. IEN, Harvey, Ill. Sizes range from 24 to 72 inches. Construction is in reinforced structural shapes. The arm will pick up loads that forks or clamps cannot handle.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11254

SPEED CONTROL WIDE RANGE! LOW COST!

new catalog free

Just off the press! New illustrated catalog describes SPEED SELECTOR'S new line of Variable Pitch Sheaves. These sheaves are for extra-wide range of speed control on fixed centers...also completely new designs for low speed applications. Save time, trouble, money...WRITE FOR CATALOG No. 44 TODAY.

SPEED SELECTOR INC.
118-A NOBLE COURT • CLEVELAND 13, OHIO

If you write maker identify as IEN - 11255

IMPERIAL Tubing Test Plugs

. . . for temporarily shutting-off tubing

For complete information, ask for Folder 3030 which also describes IMPERIAL'S complete line of tubing tools for cutting, flaring, bending, etc.

See your supply house

When you wish to shut-off the end of a tube temporarily, simply insert the correct size IMPERIAL Tubing Test Plug and tighten the wing nut. Synthetic rubber expands and seals tube. Will hold up to 100 lbs. pressure.

Far less expensive than soldering caps on the ends of the tube. No need to install a valve or pinch-off tubing.

Imperial Test Plugs are being extensively used for pre-testing tubing installations or "trouble shooting" for leaks. Field of application is growing rapidly.

Keep a few of these plugs on hand for every size of tubing you use.

No. 140-F Imperial Tubing Test Plugs for ¼", ⅜", ½", ⅝", ¾" and ⅞" O.D. Tubing.

THE IMPERIAL BRASS MFG. CO., 508 So. Racine Ave., Chicago 7, Ill.

IMPERIAL — Pioneers in Tube Fittings and Tube Working Tools

If you write maker identify as IEN - 11256

you may not see it . . .

or ***feel it,***

but ***it's there!***

Excessive moisture vapor causes corrosion, fungus growth and other damage within sealed containers.

When relative humidity is not controlled . . . Precision equipment corrodes and fails. Optical instruments fog and are temporarily useless. Electronic and radio equipment lose efficiency. Certain foods and drugs lose freshness or deteriorate.

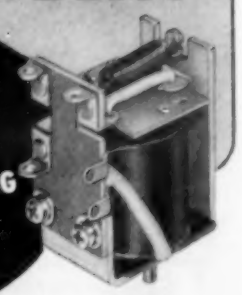
DriAire offers proven solutions to many of these problems. As the largest manufacturer of moisture control devices, DriAire welcomes any problems of humidity control and indication. Your inquiries are invited.

DRIAIRE — **DriAire** INCORPORATED
SOUTH NORWALK, CONNECTICUT

If you write maker identify as IEN - 11257

NEW DC RELAY

COMPACT SIZE *Sensitive*
MULTIPLE CONTACTS
SINGLE STUD MOUNTING
EASY TO CONNECT
LOW IN COST



TYPE "O"

A sensitive, DC relay, designed primarily for automotive light systems, electronic tube circuits, alarm systems and other similar applications. Custom-engineered to your specifications.

Available in 2 Sizes:

TYPE O-1—Short frame. Height, 1⅝"; length, 1³⁵⁄₆₄"; width, ⅞". Sensitivity, down to 75 milliwatts. Maximum resistance, 9000 ohms. Maximum contact combination, DPDT. 10 amp. contacts.

TYPE O-2—Long frame. Height, 1⅝"; length, 1³⁵⁄₆₄"; width, ⅞". Sensitivity, down to 50 milliwatts. Maximum resistance, 13000 ohms. Maximum contact combination, DPDT. 10 amp. contacts.

Send For Full Details Now!

Comar ELECTRIC COMPANY
3349 Addison Street, Chicago 18, Illinois

RELAYS • SOLENOIDS • COILS • TRANSFORMERS • SWITCHES • HERMETIC SEALING

If you write maker identify as IEN - 11258

ONLY

THRIFTMASTER Universal Joint Type DRILL HEADS

have these exclusive* features

6 Standard Models
Models U-608 and U-1000—Ball Bearing
Models U-620B and U-1012B—Plain Bearings, 11/16" or ½" min. centers.
Models U-608-BS and U-1000-BS—Ball Bearing Gear Case, Plain Spindles

Semi-Standard Heavy Duty Full Ball Bearing
½" in Cast Iron—1-7/16" min. centers 7⅛" or 9⅝" Dia.
½" in Steel—1-13/16" min. centers 7" or 9⅝" Dia.
Also Larger Adaptations and Full Line of Fixed Center Drill Heads.

• Standard Full Ball Bearing Construction, including Spindles.
Driving assembly is Full Ball Bearing mounted with 3 Bearings on each spindle. Thrust load carried by radial thrust bearings.

• Standard Slip-On and Slip-Off Template Construction
For accurate setting and locating spindle brackets are machined to receive slip-on and slip-off template.

WRITE FOR FULL INFORMATION

THRIFTMASTER Products Corporation
Subsidiary of Thomson Industries, Inc.
1040 N. Plum Street, Lancaster, Penna.

Also Makers of
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as IEN - 11259

HOW XEROGRAPHY
(ZE-ROG-RA-FEE)
Cuts Duplicating Costs
of engineering drawings
AT FORD MOTOR COMPANY

Cost study indicates savings of approximately $75,000 a year!

An extensive study of office equipment by analysts in Ford Motor Company's Central Office, indicates that offset paper masters prepared by the xerographic process, as compared to various other methods, save time and money.

XeroX® Lith-Master* copying equipment is used in a number of departments in various Ford plants. Special XeroX copying equipment is used in the Duplicating Section of the Engineering Staff, Administrative Services Department, Dearborn, Michigan, to prepare offset paper masters of 12" x18" engineering drawings for runoff of multiple copies on an offset duplicator. Using the xerography and offset combination, 100 copies of a drawing can be made in five minutes at a cost of about 97 cents, which is considerably less than by other duplicating methods. Cost studies indicate a saving of approximately $75,000 a year.

There is no limit to the versatility of xerography, the dry, electrostatic, copying process, in paperwork duplicating applications. Copies can be enlarged, reduced or made same size of anything written, typed, printed or drawn from one or both sides of original. *Translucent intermediates can be made for use in diazo type machines.*

*A TRADEMARK OF THE HALOID COMPANY

WRITE for proof of performance folders showing how Ford Motor Company and companies of all kinds are cutting costs and speeding paperwork with xerography.

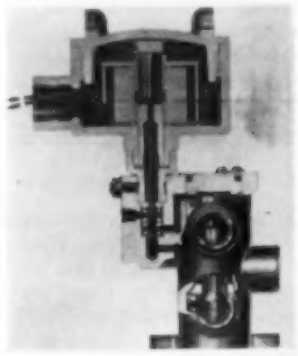
THE HALOID COMPANY
54-55X HALOID STREET • ROCHESTER 3, NEW YORK
BRANCH OFFICES IN PRINCIPAL U.S. CITIES AND TORONTO

XEROGRAPHY
THE FASTEST, CHEAPEST, MOST VERSATILE WAY TO MAKE MASTERS FOR DUPLICATING.
XEROX

If you write maker identify as IEN - 11261

Valve - Solenoid operated 4-way, pneumatic or hydraulic, to 150 pounds

Source: BARKSDALE VALVES
5125 Alcoa Ave., Dept. IEN, Los Angeles 58, Calif.



Explosion proof

Short stroke to minimize heating in the solenoid coil and enclosure of the solenoid in an explosion proof housing characterizes the new construction of the company's Series 1046 Crescent solenoid operated valve. The new construction is further addition to the line for which a new sub-base assembly was previously described IEN-5989-54. The cover of the explosion proof housing is removable for quick access to the solenoid. Coils are interchangeable to provide for conversion to any standard voltage.

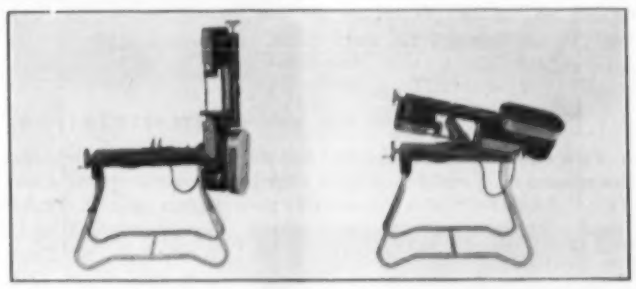
The valve itself, previously described IEN-9586-50, includes two main vertical valve members held in normal "up" position by a combination of light spring and fluid pressure. One is open to exhaust and closed to pressure. The other is open to pressure and closed to exhaust. Built into the body, and connected to the solenoid at the top, is a 3-way pilot valve with pressure and exhaust connecting alternately to cylinders at the tops of the two valve chambers.

Energizing the solenoid applies pressure to move the valve plungers down and reverse the main operating and exhaust connections. De-energizing the solenoid permits the plungers to return to normal "up" position. Valve sizes range from ½ to ¾ in. at the main line connections. The pilot connections are ⅛ inch.

If you write maker identify as IEN - 11262

Sawing - Band saw machine for horizontal and vertical operation

Source: WELLS MFG. COMPANY
1111 Madison St., Dept. IEN, Three Rivers, Mich.



For utility use

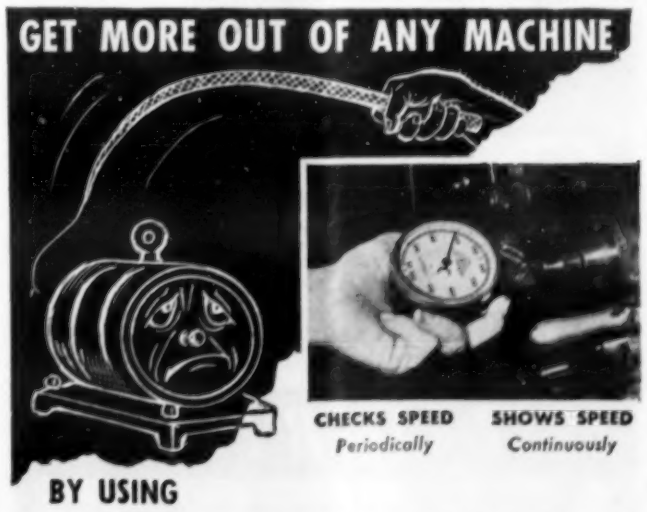
New-49A designates a new metal cutting band saw in which the motor driven head can be swung from horizontal to vertical position or back again to suit given work. The machine is portable on its tubular stand. It weighs about 110 pounds.

Capacity is 3½ by 6 in. for rectangular work when set square and in horizontal position. It will take 3½-in. round work. The ½-in. by 5-ft. blade is driven by a ¼-hp. 110-volt motor with shut-off control at the end of a cut. A V-belt transmission can be positioned for speeds of 54, 100 and 190 fpm. Bed area measures 6½ by 24 inches. Height to the top of the bed is 24 in. and floor space is 16½ by 38 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11263

GET MORE OUT OF ANY MACHINE



CHECKS SPEED *Periodically*
SHOWS SPEED *Continuously*

BY USING
JONES TACHOMETERS

How can you get the most from your machinery without sacrificing the quality of your product? A Jones TACHOMETER will give you the answer in RPM's, FPM's, etc. Jones TACHOMETERS are used widely in every type of industry to check and maintain best performance of operating equipment. Both Portable (as illustrated) and permanently installed types are available at surprisingly moderate cost.

• WRITE FOR BULLETIN 146-2 •

JONES MOTROLA CORP.
Stamford, Conn.

If you write maker identify as IEN - 11264

KODAGRAPH MICRO-FILE EQUIPMENT

Here's everything you need for a low-cost, trouble-free microfilming operation . . . one that will meet *your* individual requirements.

• **Kodagraph Micro-File Machines**—four separate models designed to meet a variety of conditions. *Each* a high-precision unit which can be operated by anyone.

• **Kodagraph Micro-File Film**—extremely fine grained, high resolution. Assures sharp, crisp rendering of all details.

• **Kodagraph Film Readers,** which permit you to view your films quickly, conveniently.

• **Kodagraph Micro-File Enlarger,** which enables you to make paper enlargements from 16mm. and 35mm. microfilms which are comparable in clarity to the originals.

• **Kodagraph Print Film**—ideal for making positive copies of negative microfilm records.

Write today for free illustrated booklet giving full information.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 11265

New... Air Drill World's Smallest

It's Really Amazing!

• 3/16" HEAVY DUTY DRILLING
• NEARLY 1/4 H.P. . . . STALLPROOF
• 1/4" LIGHT DUTY DRILLING
• WEIGHS LESS THAN 1½ LBS.
• USES 38% LESS AIR

Highest precision construction makes this drill revolutionary!
Write ARO or see your ARO distributor.
THE ARO EQUIPMENT CORP., BRYAN, OHIO
Offices in All Principal Cities
In Canada—Aro Equipment of Canada, Ltd., Toronto, Ont.

ARO
AIR TOOLS
Also . . . AIR HOISTS . . . LUBE EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

If you write maker identify as IEN - 11266

New Bond S-L-U* DRUM TRUCK
. . . for faster, easier handling

◀ Spring action chime hook.
◀ Floating axle with rolling motion.
◀ Rugged all steel welded construction.
◀ Two wheel types: vulcanized-on rubber tread or semi-steel.
◀ Rests in tilted position for maximum drainage.
◀ Stands upright for safe storage.

The *new* Bond *Self-Loading and Unloading Drum Truck takes "the work" out of lifting, moving and draining either drums or barrels . . . and speeds the job at that! Like every hand truck in the full Bond line, this drum truck is designed and built to give extra service, extra satisfaction!

Write today for your copy of Bond Bulletin R-61 . . . it gives all the facts on the new Bond Drum Truck.

BOND FOUNDRY & MACHINE COMPANY
Manheim, Pennsylvania

If you write maker identify as **IEN - 11267**

RUST PROTECTION *with* carbon ground rods

A typical rust prevention use for Stackpole carbon ground rods is in the cathodic protection of pipe lines from external corrosion. Used as anodes, the rods are placed at intervals and a low-potential direct current applied between them and the pipe.

Stackpole ground rods are available in lengths to 60" and diameters to 3". They are equipped with sealed flexible copper leads.

Send details of your application for prompt recommendation by Stackpole engineers.

STACKPOLE

STACKPOLE CARBON COMPANY, *St. Marys, Pa.*

"EVERYTHING IN CARBON BUT DIAMONDS!"

If you write maker identify as **IEN - 11268**

Super Sweeper Snaps Up Nails, Tacks and Scrap

From Factory Floors, Lots, etc.

New lightweight **PERMANENT MAGNET** *receives enthusiastic reception for maintenance help.*

Increasing problem to maintenance executives caused by dangerous tramp iron is solved by the Eriez Super Sweeper. Harmful, and often expensive, staples, nails and pieces of scrap iron are quickly snapped up by Super Sweeper's powerful ALNICO action.

Super Sweeper is light and easy to handle . . . sweeps large areas with maximum efficiency. Use it indoors or outdoors. It is a self-contained unit. No electric current. Your first cost is your last cost!

Thanks to Super Sweeper's design it can be PULLED by a jeep, truck, etc. . . . or PUSHED by a man . . . or SUSPENDED from a lift truck. The tubular steel handle can be removed. Wheels, fitted with puncture-proof 8.00" x 2" tires, are also removable.

Three strengths and four magnet widths (24", 36", 48" and 60") make certain that there is a Super Sweeper to fit your exact requirement. Write for Bulletin on this versatile trouble-saver.

ERIEZ

MANUFACTURING COMPANY

51K Magnet Drive, Erie, Pa.

ERIEZ

If you write maker identify as **IEN - 11269**

Fit parts accurately

INDIA* and HARD ARKANSAS* OILSTONE FILES

• For really close work – fitting machine parts, making dies and precision tools, deburring, etc., INDIA and HARD ARKANSAS shaped oilstone files have no substitute. They enable you to meet close tolerances on all surfaces, no matter how intricate. Over 35 different shapes and 97 sizes to choose from. Use INDIA for regular work, HARD ARKANSAS for super-fine finishes.

NEW OILSTONE CATALOG

Contains full description of the complete BEHR-MANNING line of oilstones. Write to BEHR-MANNING, Troy, N. Y. for your copy. Address Dept. IEN-10.

®* Trade-marks

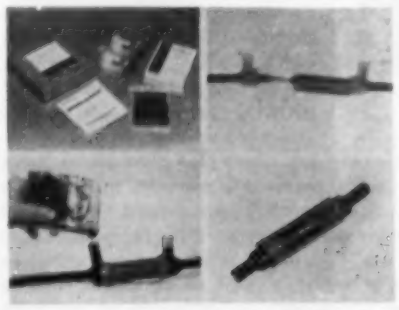
0-3

BEHR-MANNING ▲ COATED ABRASIVES ▲ SHARPENING STONES ▲ PRESSURE SENSITIVE TAPES

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for action, each to provide ideas for you.

If you write maker identify as **IEN - 11270**

An electric conductor can be spliced and sealed in epoxy resin by application of a new kit offered by Minnesota Mining & Mfg. Co., 900 Fauquier St., Dept. IEN, St. Paul 6, Minn. The kit contains the necessary parts as well as the ready-to-pour resin. Mold pieces are slipped on the ends of the conductor. The insulation is penciled down. The spring connector is turned on with the fingers. The plastic mold units are put into place. Then the inner partition in the Unipak container of resin is ruptured by squeezing so the resin and hardener can be mixed by kneading the package. A corner is snipped off the package, when the resin assumes uniform color, and the resin is poured into one of the spouts of the mold. It sets in 5 to 15 min. permanently.

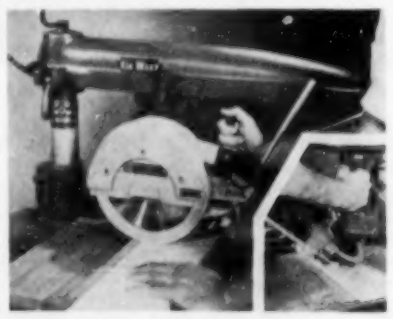


If you write maker identify as **IEN - 11271**

Water employed for parts washing and for hydrostatic testing can be treated by addition of a new white crystalline powder, known as Rust Inhibitor Q, so the water will not corrode the metal. The inhibitor is a white crystalline powder that dissolves in the water. It is particularly suited for rinses following cleaning operations on metal products and for addition to water used in hydrostatic testing of pumps, tanks, radiators. Manufacturer is Nox-Rust Chemical Corp., 333 No. Michigan Ave., Dept. IEN, Chicago 1, Ill.

If you write maker identify as **IEN - 11272**

Two circular rings, one on each side of the saw blade, are suspended on a regulation type guard in construction of a new safety guard. It has been developed by De Walt, Inc., 63 Fountain Ave., Dept. IEN, Lancaster, Pa., for its "Power Shop" radial machines in 9, 10 and 12-in. sizes. The rings adjust themselves to the cut while maintaining operator protection without offering any restrictions. Retaining plates act as guides to maintain the rings in position with the blade during operation.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 11273**

"rough stuff's" **OUT**

with SPROUT-WALDRON

BELT-SAVER PULLEYS

Sharp lumps and abrasive materials are cast out of Belt-Saver Pulleys by the exclusive cone and wing design . . . without lodging between belt and pulley. This protects belts so effectively that belt life is increased 50% to 400%.

For conveying and transmission use, Sprout-Waldron also offers a wide selection of sturdy cast-iron pulleys in many sizes and types.

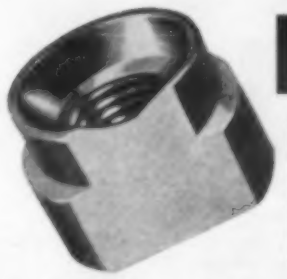
Write for free booklets!

SPROUT-WALDRON

5 LOGAN STREET • MUNCY, PA.

PELLEY MILLS • HAMMER, ROLLER, ATTRITION, and BURR STONE MILLS MIXERS • SCREW, BELT, and PNEUMATIC CONVEYORS • BUCKET ELEVATORS CUTTERS, CRUSHERS, and FEEDERS • REELS, SEPARATORS, and ASPIRATORS

If you write maker identify as **IEN - 11274**



DECKER INDUSTRIAL FASTENERS

Decker Clinch Nuts are manufactured in a broad range of sizes to meet and speed every type of assembly operation. They are faster, easier to install . . . accurate and dependable. Cold-heading process affords extra-strong neck for clinching attachment. Double flat or plated clinch nuts available.

Whether you use cold-headed Pipe Plugs, Weld Nuts, hex type nuts or other special fasteners, Decker Industrial Fastener will add new efficiencies to your manufacturing and assembly operations.

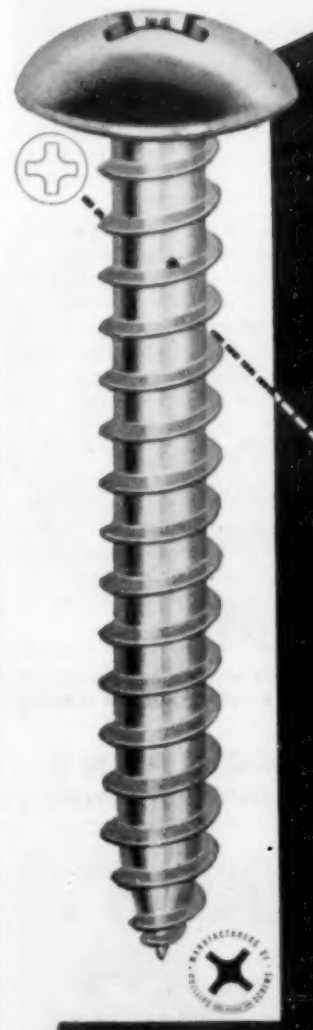
Request your copy of Decker's big illustrated Industrial Fastener catalog . . . today!

DECKER MANUFACTURING COMPANY

ALBION, MICHIGAN

If you write maker identify as **IEN - 11275**

ELCO PHILLIPS CROSS-RECESSED SCREWS



WOOD SCREWS
MACHINE SCREWS
TAPPING SCREWS
THREAD-CUTTING SCREWS
SEMS SCREWS
STOVE BOLTS

Elco Screws are Good Screws

Have you tried ELCO for Quality, Price, and Delivery?

ELCO TOOL AND SCREW CORPORATION

1956 BROADWAY • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 11277

CHIPS OFF HARD DEPOSITS AT THE TOUCH OF A TRIGGER!

TENNANT HAND REVO-TOOL

SHEARING OFF HEAVY BUILD-UP under machine. Lets one man do the work of a hand-scraper crew. Tool is 9" wide; works in hard-to-reach areas.

- Scrapes up to 160 sq. ft. per hour
- Saves up to 59% in scraping costs
- Cleans iron, steel, concrete and similar surfaces

Just touch the trigger—and this powerful NEW tool chips off stubborn rust, scale, paint and other hard deposits *instantly!* Works 12 to 20 times faster than hand scraping. Leaves clean surface for repainting.

Steel cutters revolve at 2,000 rpm; provide 3,400 impacts per second. Has ¼ hp electric or pneumatic motor. Write for details.

TENNANT ESTABLISHED 1870

G. H. TENNANT CO.
2574 N. 2nd Street
Minneapolis 11, Minn.

HAND REVO-TOOL

If you write maker identify as IEN - 11278

Write for bulletins on this rugged money-saving materials-handling equipment

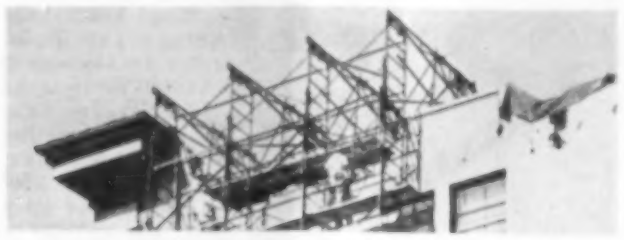
Phillips equipment has proved its merit in thousands of applications everywhere. Ruggedly built and well designed, it withstands hard usage for longer periods. You'll profit by having Phillips literature on file.

Phillips
CORPORATION
(formerly Phillips Mine & Mill Supply Co.)
Manufacturers Since 1863
15 Arch Street, Carnegie, Pa.

IDEAS for YOU—*Continued*

If you write maker identify as IEN - 11280

Scaffold can be hung to project downward in a new assembly of the standardized components made by Waco Mfg Co., 3555



Wooddale Ave., Dept. IEN, Minneapolis 16, Minn. The new assembly consists of a tower with outriggers that cantilever over a building parapet. Ladder frames, held together with toggle pins and spaced with pivoted cross braces, are hung from the outriggers. Counterbalance for the hanging portion is by means of sand bags placed on the scaffold on the roof back of the parapet.

If you write maker identify as IEN - 11281

Epon resin base coatings can be removed from ferrous and non-ferrous metals by application of a new Liquid Stripper No. 9 manufactured by Northwest Chemical Co., 9310 Roselawn Ave., Dept. IEN, Detroit 4, Mich. The liquid will not attack the base metal, with the exception of aluminum. It is non-corrosive to others.

If you write maker identify as IEN - 11282

Universal 704M is a new threaded cap with a gasketed threaded cover to apply on a fill pipe. Feature is the removable aluminum identification tag. It is held in place by two screws so it can be removed and replaced if the fluid in the tank is changed from one type to another. Manufacturer is Universal Valve Co., 407 South, Dept. IEN-33, Elizabeth, N. J. Three sizes are 2, 3 and 4 inches.

If you write maker identify as IEN - 11283

For $1.95, which you send direct to the company with your order and not through IEN, you can purchase a pocket size stainless steel caliper to read electrical conductor sizes directly. Readings also are included in 32nds to a 3½-in. rule length. There is a conversion table of pipe sizes to inside dimensions. Wire-Mike is the designation. Send your money and order to Burndy Engineering Co., Dept. IEN, Norwalk, Conn.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11284

ROBINSON METERING PUMPS

FORCIBLY EJECT EXACT METERED AMOUNTS OF:

ASPHALT • RESIN • PITCH • ROSIN ADHESIVES • STEARIC ACID and PLASTER OF PARIS • PORTLAND CEMENT AND VARNISH MIXTURE • SEALING COMPOUND • POLYAMIDE • PLASTISOL PASTES • GLYPTAL MIXTURES • RUBBER BAKELITE

Melt and meter materials that are solid at normal temperatures. Easy ejection through tiny apertures.

Any of 20 discharge quantity settings can be changed in 2 seconds (one model has 50 settings) without tools.

Eject accurately .04cc to 370cc in 2/3 second.

Thermostatic heat from 70° to 500° F . . . Viscosities from #10 S.A.E. oil to 200,000 centipoises.

Unskilled operators quickly learn to do neat, clean work.

The versatile Robinson Metering Pumps may be the *economical* solution to one of your production problems. Write for free folder.

EDWARD E. ROBINSON
INCORPORATED
P.O. Box 47
95 PARK AVE. - NUTLEY 10, NEW JERSEY
Telephone NUtley 2-4510

If you write maker identify as IEN - 11285

Add Years to Air Equipment Life—Use Filtered Air

All air lines collect moisture. Rust and dirt enter the lines, too, to clog lines, and shorten equipment life.

Give your air equipment top protection with Schrader Air Line Filters ahead of each air control unit. Schrader filters offer no restriction to full air flow, even after long use. Moisture is trapped in the bottom of the filter, can be drawn off through a drain cock.

See how Schrader Air Line Filters and other Schrader accessories can add to your effective use of air. Send for the Schrader catalog today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-48 • Brooklyn 38, N. Y.

If you write maker identify as IEN - 11286

ARMSTRONG-BRAY HYDRAGRIP HYDRAULIC PULLERS

Valuable Maintenance Tool

With the handy HYDRAGRIP and a few ARMSTRONG-BRAY Pullers, one can quickly, safely and easily remove gears, wheels, bearings, sheaves or parts from shafts, can re-install them with equal ease. Single centered ram assures aligned thrust that moves parts along shafts smoothly without wedging or binding. Saves time, saves parts—ends battering and breakage. The HYDRAGRIP—comes complete with handy, portable, hydraulic hand pump, high pressure connecting hose and 17½-ton capacity hydraulic jack with interchangeable heads.

Write for Catalog Sheet—describes HYDRAGRIP and complete line of standard and special external and internal pullers.

ARMSTRONG-BRAY & CO.
5380 NORTHWEST HIGHWAY • CHICAGO 30, ILL.

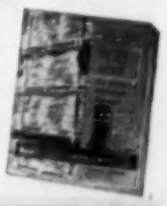
If you write maker identify as IEN - 11287

LET US SHOW YOU HOW TO CUT WAREHOUSING COSTS . . . as much as 75%

Paltier STORAGE SYSTEM

PALTIER records are filled with proof after proof of storage cost cuts in the handling of every conceivable type of product. We can cut your storage costs, too!

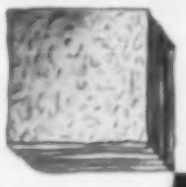
ASK US:
- PALTIER studies your storage problem—engineers and designs a system for your specific needs.
- Many PALTIER installations pay for themselves "right from the start."
- This booklet tells the PALTIER story, ask for it today.



THE PALTIER CORPORATION
1711 KENTUCKY ST.
MICHIGAN CITY, IND.

If you write maker identify as IEN - 11288

to designers and engineers:



SEND FOR A SAMPLE SET OF **TUFFLEX FABRICS**

You've never seen anything like these versatile, new non-woven fabrics! They're made from various fiber combinations—and they have a thousand uses: protective padding—cushioning—linings—fillers are only a few. You can choose from types which are soft, firm, springy, resistant to compression, non-abrasive, non-corrosive, or high in wet and dry strength. See for yourself how Tufflex fabrics can serve YOU better. Send now for free samples—no obligation. Wood Conversion Company, Dept. 126-104, First National Bank Building, St. Paul 1, Minnesota.

KEEP YOUR EYES ON **TUFFLEX* FABRICS**

*Reg. U. S. Pat. Off.

If you write maker identify as IEN - 11289

Use SMALL METAL PARTS?

Small Zinc Die-Castings—1000 per lb. to 3 per lb.—made on *fully automatic* machines that combine the design latitude of die-casting with production rates of screw machines, stamping presses, etc. Attractive tool costs. Investigate! Send for Small Parts Folder & Samples . . . or send prints or samples for quotation. *Dollin Corporation, 630 So. 21st St., Irvington 11, N. J.*

DOLLIN SMALL ZINC DIE-CASTINGS

If you write maker identify as IEN - 11290

Eliminate Costly and Dangerous

WATER HAMMER

in your piping system *with*

WILLIAMS-HAGER FLANGED *Silent* CHECK VALVES

Yes . . . compact, durable and dependable Williams-Hager check valves will eliminate expensive and troublesome noise in *your* piping system. Available for standard pipe sizes from 1" to 20", they operate with maximum efficiency in horizontal, vertical or angular positions. Send for complete details.

Write for Bulletin 851 today!

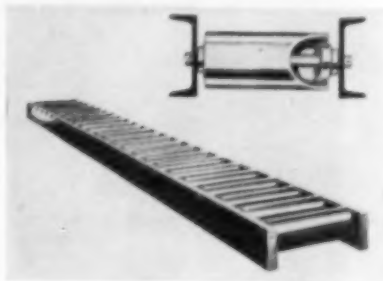
CHECK VALVES

THE WILLIAMS GAUGE CO., INC.
2900 Pennsylvania Avenue, Pittsburgh 33, Pa.

If you write maker identify as IEN - 11291

Conveying - Ball bearing roller, 3½ in. diameter for easy starting

Source: E. W. BUSCHMAN COMPANY
4447 Clifton Ave., Dept. IEN, Cincinnati 32, Ohio



Specifications on request

Model X3509 designates a new 3½-in. roller for assembly in channel sections on 11/16-in. hexagon axles to make a specified conveyor installation. Load rating is 1,000 lb. per roller on a level line and 730 lb. on a gravity line. The new 3½-in. unit requires 50 per cent less traction to move a palletized load along a level line than is required for company's previously developed 2½-in. roller.

The roller is made of 9-gage steel tube with counterbored ends to take adaptors in which any one of four types of ball bearing can be installed. These include units with labyrinth seals, lubricated dust proof design, grease packed to require no service attention, pressure lubricated or plain.

If you write maker identify as IEN - 11292

Stapling - Hand operated tool drives with outward clinching action

Source: FASTENER CORPORATION
860 Fletcher St., Dept. IEN, Chicago 14, Ill.

Loads at rear

Tags and labels can be secured to corrugated cartons with this new Outward-Clinch stapler, Model CT-851-OC. Insulation wrappings can be fastened around pipe lines and similar work performed in soft materials like corrugated paper, cardboard, fabrics. The tool enters the staple into the work upon depressing the handle. Then it diverts the staple legs outward and upward in a clinching action without the use of an anvil base. It can be converted to drive the staple straight into the work by inserting a regular front jaw. The tool takes ⅜ and ½-in. Duo-Fast staples.

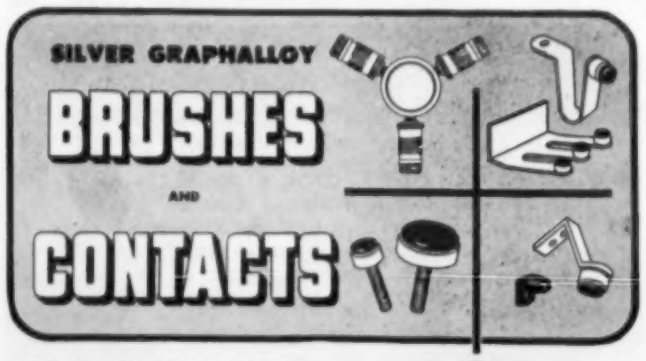
If you write maker identify as IEN - 11293

Everdur or stainless steel wire, in a "V" cross section, is wound in a spiral in construction of a tubular steam diffuser manufactured by O'Brien Steam Specialty Co., Box 217, Dept. IEN, Syracuse 6, N. Y. Three lengths are 12, 18 and 24 inches. Two diameters are 1¼ and 2 inches. The diffuser is designed to mount horizontally at the bottom of a liquid tank with tee connection into a steam supply line. Continuous opening between the spirals, measuring 0.006 in., provides for exit of the steam, without noise or vibration, in an action that rapidly mixes with the liquid and produces uniform temperature throughout the tank. Capacity, based on 100-lb. steam and 100-deg. F. rise is 40 to 80 gpm. for the 1¼-in. unit. It is 75 to 150 gpm. for the 2-in. diffuser.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11294

SILVER GRAPHALLOY BRUSHES AND CONTACTS



. . . for applications requiring low electrical noise, low and constant contact drop, high current density and minimum wear.

GRAPHALLOY

EXTENSIVELY USED IN

SELSYNS • ROTATING THERMOCOUPLE and STRAIN-GAGE CIRCUITS • ROTATING JOINTS GUN-FIRE CONTROLS • DYNAMOTORS etc.

Wide range of grades available for standard and special applications.

Brush holders and coin silver slip rings available for use with Silver Graphalloy Brushes.

Write us for Data Sheets and further information. Outline your problem and we will apply our "40 years' experience" toward its solution.

OTHER GRAPHALLOY PRODUCTS:

Oil-free, self-lubricating Bushings and Bearings (applicable −100° to +300° F.; with expansion coefficient half that of steel will not seize shaft at low temperature); oil-free Piston Rings, Seal Rings, Thrust and Friction Washers, Pump Vanes.

GRAPHITE METALLIZING CORPORATION
1032 NEPPERHAN AVENUE • YONKERS, NEW YORK

If you write maker identify as IEN - 11295

FITS BOTH BIT BRACES ELECTRIC DRILLS

CUT OFF HERE

Irwin 2-Way "Hex" Shank fits both Bit Brace and Electric Drill Chucks

IRWIN "HEX" SHANK WOOD BITS

Use new Irwin 2-Way "Hex" Shank wood bits in Bit Brace. Remove and use in Electric Drill. "Hex" Shank fits both—perfectly! No wobble, no run-off. Speed up work on the job. Reduce replacement stock and handling by 50%. Sizes 4/16" to 17/16".

Call your mill supply distributor, or hardware wholesaler for details and prices. Irwin—Wilmington, Ohio.

IRWIN HEX SHANK WOOD BITS

If you write maker identify as IEN - 11296

Overhead Work's a Snap!

because you simply 'Snap-Clamp' together, the lightweight ladder panels of Universal's Ladscaf—no need to bolt or use special tools, just Place and Snap

Ladscaf is positively-locked to effect safe work platforms in any width, any length, or any shape.

Climb stairs? It's easy! Bridge sections easily level by 'Snap-Clamping' to the nearest welded-steel rung (spaced every 12"). Stabilizers assure safe erection of high platforms, swivel back to roll the 2-ft. wide panels thru narrow passageways. Whatever your lightweight scaffold needs, it's a 'Snap' to save with

UNIVERSAL *Ladscaf* SCAFFOLDING

You can combine Ladscaf with famous Universal Ezebilt panels and Endlok Pipe-and-Clamp for difficult, unusual jobs.

Distributors offer fast service—See your classified phone directory.

UNIVERSAL MANUFACTURING CORP.
ZELIENOPLE 5, PA.

If you write maker identify as IEN - 11298

HARDWOOD LAMINATED

Bench Tops

- Counter and Table Tops
- Locker Bench Tops
- Special Glued Forms

FROM the drying of the lumber in Sensenich's own kilns* to the cutting, forming and gluing of every hardwood laminated top, the highly trained Sensenich craftsmen play an important part. These skilled workmen use the finest equipment to produce high quality wood parts with thorough efficiency and economy. Remember too, Sensenich is the world's largest producer of wood propellers for personal planes. Sensenich has more than 20 years experience in conditioning, cutting and gluing wood forms to the most exacting standards.

We will be glad to quote on your requirements . . . your request will receive prompt attention.

SENSENICH

*Certified by the United States Air Force

SENSENICH CORPORATION
Dept. IN, Lancaster, Pennsylvania

If you write maker identify as IEN - 11299

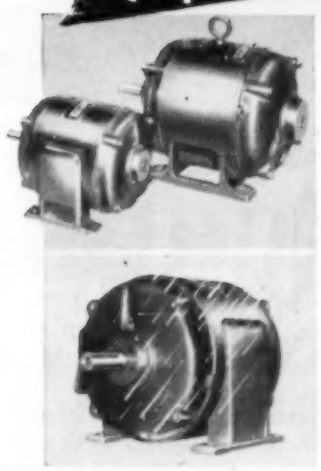
NEW

Century Performance-Rated©

INTEGRAL H. P. MOTORS

Now available in 1 . . . 1½ . . . 2 H. P. sizes—
NEMA frames 182 AND 184

Improved Motors to match your needs



SMALLER—LIGHTER
More uniform silicon-laminated steel; and thinner, tougher "Mylar" slot insulation are just two developments that help make these new Century Motors much *smaller* and *lighter*.

BETTER PROTECTION
You get better internal motor ventilation and far better protection from falling liquids and solids . . . still maintain 40° C. temperature.

MORE FLEXIBLE MOUNTING
You can have cushion or solid mounting—sleeve or ball bearings. End brackets can be rotated for floor, ceiling or side wall mounting.

New insulating materials possess far better dielectric qualities. Die cast aluminum rotors are individually, dynamically balanced to assure freedom from vibration.

Century manufactures AC and DC Generators—Repulsion Start, Capacitor, Single Phase, Polyphase and Direct Current Motors up to 400 H.P.

Specify Century Performance-Rated Motors for your equipment. Call a Century District Sales Office or your nearest Century Authorized Distributor.

Century C MOTORS
Performance-Rated©
⅙ to 400 H. P.

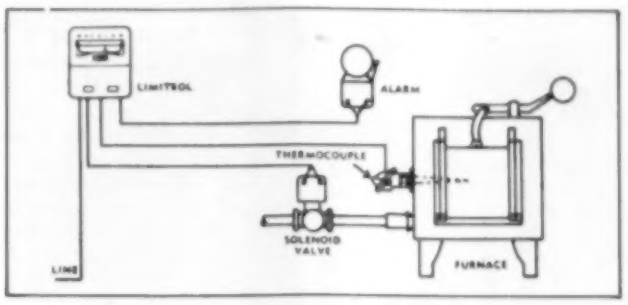
CENTURY ELECTRIC CO.
1806 Pine Street
St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

If you write maker identify as IEN - 11301

Control - Electronic instrument prevents exceeding preset temperature

Source: BARBER-COLMAN COMPANY
1300 Rock St., Dept. IEN, Rockford, Ill.



Bulletin F-6313

Limitrol Series 700 is a new electronic instrument to actuate a solenoid operated valve and, if desired, to sound an alarm when a preset furnace temperature is reached. Fuel input to the furnace is shut off at this point. It also is shut off in the case of thermocouple failure or broken thermocouple connection. The instrument is available for use with various types of thermocouple for maximum temperatures to 3,600 deg. F.

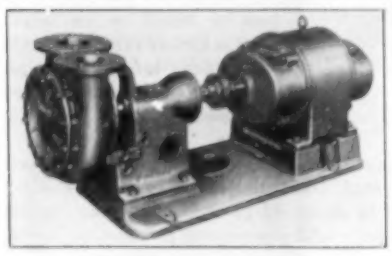
Contact rating is 30 amp. on 110-volt ac., for the Model 714 unit, and 10 amp. on 110-volt ac. for the Model 711. Overall dimensions are about 9¼ by 9¼ by 9 inches. The design is suited for either surface or flush mounting.

The indicating portion of the pyrometer type instrument consists of a direct reading galvanometer and a 6-in. mirrored scale. Measurement can be obtained with any type of primary element, such as a thermocouple or radiation detector capable of producing an electrical signal. The necessary standardizing bridge assembly is provided as an accessory unit when resistance type elements are used.

If you write maker identify as IEN - 11302

Pump - Single stage centrifugal for corrosive fluids, ¾ to 3 inches

Source: GOULDS PUMPS INC.
301 Falls St., Dept. IEN, Seneca Falls, N. Y.



Can be water cooled

Figure 3715 designates a recently improved line, nine sizes, of centrifugal pump with capacity to 720 gpm. and head to 200 feet. The fluid end can be supplied in No. 316 or No. 304 stainless steel, Gould-A-Loy 20, all iron, all bronze, bronze fitted, iron with stainless trim, or bronze with stainless trim.

Construction employs support head design with the support cast integral with the bearing housing, single or double mechanical seals, stuffing box on the suction side of the impeller, wide openings in the support head for access to the stuffing box and gland, suction and discharge connections in the housing, a housing cover for access to the interior and for removal and replacement of the impeller without disturbing the piping.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11303

OPERATE YOUR OWN

BONDACTOR
CONCRETE GUNNING EQUIPMENT

Save Money On All These Jobs

- ★ Restoring concrete and other masonry
- ★ Steel encasement
- ★ Tank lining
- ★ Parget coating
- ★ Waterproofing
- ★ Refractory and insulation applications
- ★ Sandblasting and dozens more maintenance and construction projects.

We train your personnel under actual job conditions. For complete facts on how a BONDACTOR can pay off for you, *write today!* State intended uses and materials to be gunned.

Air Placement
EQUIPMENT COMPANY
1006 West 24th St.
Kansas City 8, Mo.

If you write maker identify as IEN - 11304

SAVE TIME—STEPS—MATERIALS with HANSEN ONE-HAND TACKER

Hansen Model T-4 fastening screens in radio-phono-TV

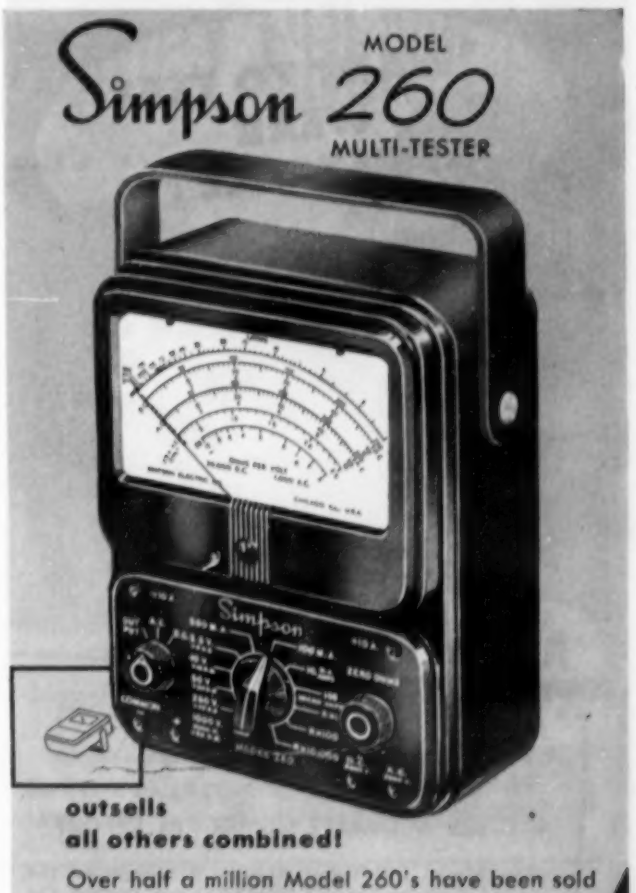
TAKE HANSEN TACKERS TO THE JOB! Hold materials with one hand. Tack them with the other. Fast operation — flexibility in use — easy portability — are combined in Hansen balanced-design. Self-contained for instant use.

Screens in radio-phono-TV — rubber dies to printer-slotter — plywood — insulation — metal lath — door and window screens — a few of thousands of every-day Hansen-tacked jobs.

A. L. HANSEN MFG. CO. REQUEST BOOKLET
5051 RAVENSWOOD AVENUE CHICAGO 40, ILL.

If you write maker identify as IEN - 11305

MODEL Simpson 260 MULTI-TESTER



outsells all others combined!

Over half a million Model 260's have been sold to date! 20,000 Ohms per volt. You'll find it wherever quick, accurate, electrical checks are needed. It's so handy, so dependable, so sensibly priced. Only $38.95, including Adjust-A-Vue Handle. Carrying cases from $6.75.

world's most popular!

MODEL 262
the new vom with a 7" meter
Deluxe!

Here's a new deluxe type VOM, with a sensitivity of 20,000 ohms per volt DC, and 5,000 ohms per volt AC. Has 33 ranges through only one control. The big easy-to-read 7-inch meter is enclosed in a compact 7-inch case. It's lightweight, dependable, and accurate. Price complete, including Adjust-A-Vue Handle, $59.50. Carrying case, $9.95.

SEE YOUR JOBBER OR WRITE TO . . .
Simpson ELECTRIC COMPANY
5207 W. Kinzie St., Chicago 44 Phone: EStebrook 9-1121
In Canada: Bach-Simpson, Ltd., London, Ontario

If you write maker identify as IEN - 11307

...and dares you to damage it

This is no ordinary hopper. It's a Roura hopper. And Roura makes 'em rugged. It takes on the toughest assignments . . . day in and day out . . . and comes back for more. Even the crash-bang handling of careless lift truck operators doesn't bother a Roura for it's built of extra heavy metal . . . welded with care . . . braced and double-braced . . . for years of trouble-free service.

Your Roura Self-Dumping Hopper will cut hand-unloading costs at least 50% . . . pay for itself before you know it. Available in sizes for ½ to 2 cubic yards for use with fork or platform lift trucks, mounted on live skids or with malleable or rubber tired casters. Literature and other information available on request. ROURA IRON WORKS, INC., 1409 Woodland Ave., Detroit 11, Mich.

ROURA *Self-Dumping* **HOPPER**

If you write maker identify as IEN - 11308

ABRASION TESTER

- SIMULATES ACTUAL WEAR CONDITIONS
- FOR PLASTICS, RUBBER, TEXTILES, PAINTS, LINOLEUM
- GIVES ACCURATE NUMERICAL REPORT

The Model 140 Taber Abraser is recognized the world over as the STANDARD for testing the wear resistance of plastics, rubber, textiles, linoleum, paint and other protective coatings. Anyone can make a scientific, wet or dry, comparative abrasion resistance test by merely inserting sample in instrument and taking numerical reading from dial. Send coupon below for descriptive literature.

SHEAR HARDNESS and DIAMOND SCRATCH TESTER

Tests quality of plastic material and plastic coated surfaces to resist scratches, digs, scrapes and other physical damage not classed as normal wear. Handles specimens from thin plate to 1/4" thickness. Used everywhere for precision perfect tests.

STIFFNESS TESTER

Determines both INITIAL and NORMAL stiffness of sheet and wire specimens in *eight* test ranges and gives report from DIRECT READING. Precision shear cuts exact specimens from paper or plastic (up to 20 pt.) to eliminate possible variation in results.

MAIL COUPON FOR FREE LITERATURE

Taber **INSTRUMENT CORPORATION** SECTION 15
111 Gundry St., North Tonawanda, N. Y.

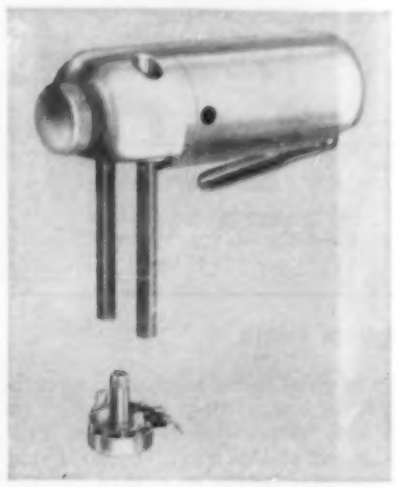
- ☐ Please send me booklet on Taber Abraser
- ☐ Please send me booklet on Taber Hardness and Scratch Tester
- ☐ Please send me booklet on Taber Stiffness Tester

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

If you write maker identify as IEN - 11310

Wrench - Pneumatic tool twists tabs in mounting sub-assemblies

Source: KELLER TOOL CO.
Parks St., Dept. IEN, Grand Haven, Mich.



For an assembly line

Tab-Set 14K-1 is a new air operated double spindle tool to twist tabs on sub-assembly parts in order to secure them in a chassis or panel. The two spindles operate in opposite directions so there is no reaction to turn the tool itself.

A sub-assembly is positioned in a panel with the tabs inserted through it and the tool is placed over them. Then the trigger is depressed to twist the tabs into locked position. When the tool is removed the spindles return to starting position. Weight is 15 ounces. Operation is on 60 to 90 lb. air. List price is $68.

If you write maker identify as IEN - 11311

Weighing - Dial scale reads compressive force to 10,000 lb.

Source: W. C. DILLON & COMPANY
14620 Keswick St., Dept. IEN, Van Nuys, Calif.

Seven capacities

Pressure Cell is a new assembly of steel compression frame or cage and the company's traction dynamometer. A load applies in contact with a hardened steel insert on the top member of the cage. Readings are taken on the 5-in. dial. It has a black satin background with silver numerals and increment marks that can be read from a distance and under most difficult lighting conditions.

The scale includes a maximum pointer. The face is covered with a safety glass crystal. Overall dimensions are 9½ by 5 by 9½ inches. Weight is about 42 pounds. The unit can be employed to check hydraulic and pneumatic presses, to measure journal bearing pressures, to weigh heavy assemblies.

If you write maker identify as IEN - 11312

High Speed Lino-Writ is a new photographic paper for use in oscillographic trace recording. A powdered developer is used with the paper. Paper size ranges from 4 to 12 in. in width and from 100 to 1,400 ft. in length. The developer is packaged in 5 and 20-qt. units. Manufacturer is E. I. du Pont de Nemours & Co., 2518 Nemours Bldg., Department IEN, Wilmington 98, Del.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11313

NEW CATALOG

tells how to get the NEW LOOK in design

This new 28-page catalog shows you how you can use Penmetal expanded metal to obtain, for your products, that smart, clean, attractive appearance that typifies modern trends in design.

Here, you will find mesh sizes, weights, gauges, and dimensions, as well as many illustrations showing how Penmetal expanded metal is used to add beauty, strength and utility in hundreds of applications.

Ask for a copy of catalog 502-EM. No cost or obligation.

PENN METAL COMPANY, INC.
General Sales Office: 205 East 42nd St., New York 17, N. Y.
Plant: Parkersburg, W. Va.

PM-44

If you write maker identify as IEN - 11314

18% BIGGER BARREL

Gives Faster, Easier, More Accurate Measurements

There's more space between graduations making it easier to estimate fractions of thousandths. There are longer graduation lines and the rapid reading figures marking each thousandth are larger. Non-glare Chrome-Clad satin finish on the barrel gives you easy reading even in poor light. Lufkin micrometers are easiest to adjust, too — the reading line keeps its original position directly in line of vision and the thimble doesn't cover measurements on the hub.

New LUFKIN Big Barrel Micrometers

A Complete New Line To Exactly Fit Your Needs

In the new Lufkin Big Barrel Micrometers you have a choice of Friction Thimble, Ratchet Cap or Direct Feel only. You can have the exclusive new Lufkin Slip-Proof black crackle finish on the frame or Chrome-Clad satin finish. You can have any style with or without lock-nut. You can have carbide tipped anvil and spindle. The new Lufkin shorter design gives you better balance and the extended anvil and tapered frame permit you to take measurements in places inaccessible to other micrometers. You'll like the new Lufkin Big Barrel Micrometers — try the one of your choice today.

BUY LUFKIN TAPES • RULES • PRECISION TOOLS FROM YOUR DISTRIBUTOR
313
THE LUFKIN RULE CO., • SAGINAW, MICHIGAN
132-138 Lafayette St., New York City • Barrie Ont.

If you write maker identify as IEN - 11315

Leva-Dock® Ramp cuts loading costs as much as 50%

Fast! Safe! Saves money!

- Hinged steel trucking platform moves up or down automatically to stay level with the truck or trailer bed.
- Compensates for varying truck bed heights, truck spring deflection, out-of-level beds.
- Power trucks can rapidly and safely move in and out of trucks or trailers.
- Dependable hydraulic operation by self-contained electric power unit or compressed air —very economical.

LEVA-DOCK USERS SAY:

"Now load twice as many trucks from same platform since installing Leva-Docks."

"Our savings in unloading time are 40% to 50% with Leva-Dock."

"Average truck loading time reduced from 15 to 7 minutes, with two less men on the job."

NEW LOWER PRICES
Write for Catalog RE-403
ROTARY LIFT CO.
1153 Kentucky, Memphis 2, Tenn.

Rotary LEVA-DOCK® RAMP

If you write maker identify as IEN - 11317

NOW

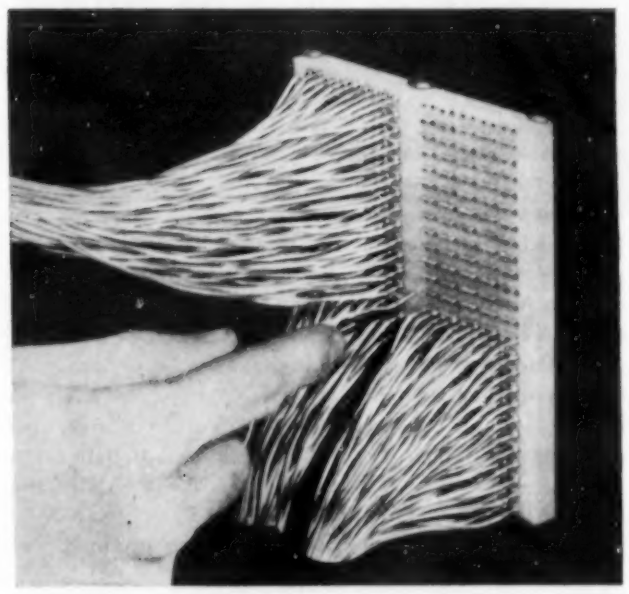
ONE CHECK VALVE for all requirements

This DURABLA BASIC CHECK Unit, added to any standard fitting (such as the reducing coupling shown here) gives you a complete valve *suitable for ANY* service. Because DURABLA Check Valves will operate in any position, they can be installed without changing existing lines. Made of stainless steel (or a combination of stainless steel and Ni-resist), they will handle practically any liquid, gas or air – at all temperatures and pressures.

Available in seven standard line sizes, from 3/8" to 2". Write for complete information.

DURABLA MANUFACTURING COMPANY
114 Liberty Street, New York 6, N. Y.
DM-10

If you write maker identify as IEN - 11318



NEW A-MP MINIATURE TAPER-BLOK For AMP Taper Pins
(Wire Ranges: -26 to -16)

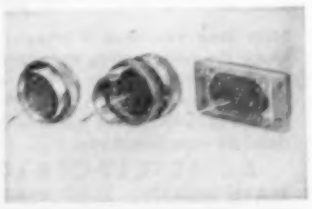
NEW TAPER-BLOK FOR A-MP'S TAPER PINS HELPS YOU, SAVE SPACE AND WEIGHT, SPEEDS UP WIRING ASSEMBLY, SIMPLIFIES DESIGN, AND REDUCES COST!

The TAPER-BLOK shown has receptacles for 1000 connections, yet measures only 4" x 5" x ⅝"! Receptacles are designed to receive A-MP self-locking Taper Pins which can be easily pushed in place with A-MP's CERTI-LOK measured energy insertion tool.

Extremely high contact pressure assures dependable, uniform, low resistance connections for electric and electronic circuits.

Assembled TAPER-BLOKS are available in 10 and 20 connector sizes with single or dual receptacles. TAPER-BLOK strips can be assembled by stacking to provide the number of connections required for your design. Write for specific information and latest prints.

TAPER PINS FOR MULTIPLE CONNECTORS, AN AND OTHER TYPES



AMP Trade Mark Reg. U.S. Pat. Off.
© AMP

AIRCRAFT-MARINE PRODUCTS, INC.
2100 PAXTON STREET, Harrisburg, Pennsylvania
In Canada – AIRCRAFT-MARINE PRODUCTS, INC.
1764 Avenue Road, Toronto 12, Ontario, Canada

If you write maker identify as IEN - 11320

Caster - Cold forged design, sealed bearing races, to 1,500 pounds

Source: RAPIDS-STANDARD COMPANY
342 Rapistan Bldg., Dept. IEN, Grand Rapids 2, Mich.

Details on request

Neoprene sealing rings are now employed to exclude dirt and retain lubricant in the two swivel races and felt rings are applied for the same purpose on the sides of the wheel roller bearing in six of the company's lines of casters. The new development represents extension of the application, previously described IEN-7059-54, to the Series 5200.

The sealed design is now available on casters with wheels measuring 3¼ to 8 in. in diameter for load ratings, depending on the type of wheel, from 260 to 1,500 pounds. For each size of swivel caster there is a mating size of rigid unit. The caster is suited for use on equipment that requires exposure to moisture, steam, chemicals, dirt. They minimize need for lubrication attention.

If you write maker identify as IEN - 11321

Drive - Miniature V-belt to use in place of round leather belt

Source: BOSTON WOVEN HOSE & RUBBER CO.
Box 1071, Dept. IEN, Boston 3, Mass.

Packaged in carton

The company announces availability of a new miniature V-belt of fabric and neoprene construction. The belt is molded and is packaged in 100-ft. lengths for withdrawal as it is required. The belt can be spliced with wire hooks. It is particularly suited for use on equipment such as sewing machines, shoe machines, business machines, printing equipment. It minimizes stretching and is resistant to slipping and to attack by oil or heat.

If you write maker identify as IEN - 11322

Contacts - Copper-tungsten for oil immersed motor starter duty

Source: GIBSON ELECTRIC CO.
8353 Frankstown Ave., Dept. IEN, Pittsburgh 21, Pa.

Also for tap changers

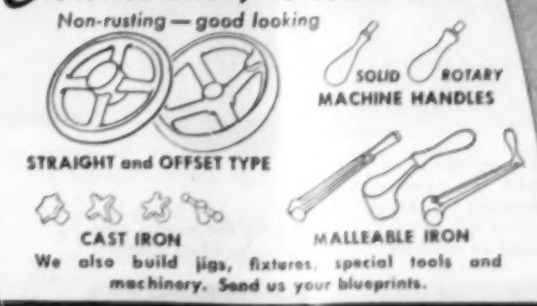
Gibsiloy UW-8 is the copper - tungsten material employed in a new set of contacts for a Size I oil immersed motor starter. The new contacts replace previous silver units that had been subject to excessive wear in the oil immersed application. The new units operate with minimum erosion. Contact resistance is sufficiently low for low temperature rise.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11323

Dependable
MEASURING & CHECKING EQUIPMENT

and Now
HAND WHEELS, KNOBS, HANDLES
Cadmium Plated READY TO DELIVER
Non-rusting — good looking



Send for Complete Catalog

We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. F Detroit 12, Mich.

If you write maker identify as IEN - 11324

NYLINED* BEARINGS

... with Smooth, Tough, Du Pont NYLON

Solve Many Bearing Problems

- Resiliency resists poundout
- Permit dry operation
- Minimize abrasion failures
- Silent operation
- Lower friction
- Superior corrosion resistance
- Damp mechanical vibration
- Eliminate friction oxidation
- Operate in liquids
- Close fits
- Non-contaminating
- Extremely compact
- Light weight
- Low cost
- Longer life
- Less maintenance
- Bearing surface instantly replaceable

* For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.

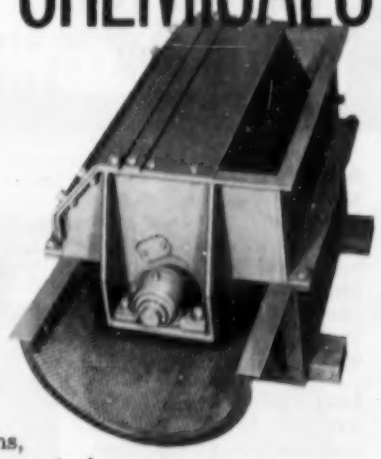
Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

If you write maker identify as IEN - 11325

FOR LUMPY CHEMICALS

it's a PRATER POWER SCREENER



If your raw materials become caked due to moisture conditions, here's an easy, economical way to restore their original free flowing, crystalline qualities. A Power Screener will do the job quickly and at a fraction of the cost of hand screening or lump breaking.

SAVE TIME • SAVE LABOR • ASSURE UNIFORMITY

with a Prater Power Screener. Get our descriptive folder today.

PRATER PULVERIZER CO.
1536 S. 55th Court Chicago 51, Ill.
PRATER

If you write maker identify as IEN - 11326

IN KING TUT'S TOMB NO MUMMY CURDLES: WHEN F. O. S.®† THEY USE AS GIRDLES!

You tape it best with F.O.S. Industrial Tape . . . product of

THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U.S.A.

Write for samples, literature, prices †Friction One Side

If you write maker identify as IEN-11327

POLYPENCO® NYLON SHAPES

MAKE LASTING REPAIRS with nylon parts machined in your shop

- Nylon gears, bearings, rollers and other wear parts often last longer than metal parts . . . require little or no lubrication . . . run quietly.
- Make one part or hundreds economically on standard metalworking tools.
- Easy machining . . . no special operator skills.
- Immediate warehouse delivery of most type sizes.
- Uniform high quality . . . technical help.

WRITE FOR INFORMATION ON NYLON SHAPES

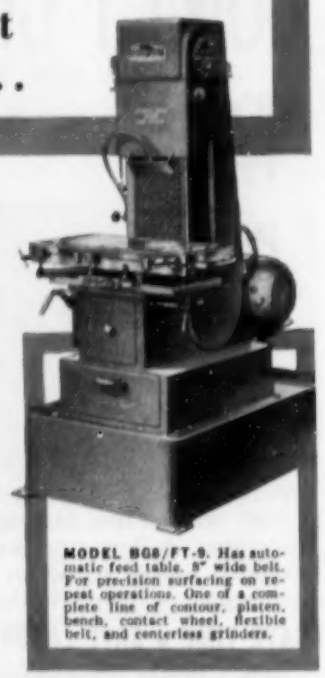
The POLYMER CORPORATION of Penna. • Reading, Penna.
In Canada: Polypenco, Inc., 2052 St. Catherine W., Montreal, P.Q.

POLYPENCO® NYLON
... teflon* and other non-metallics

Stocks: Reading • Chicago • Los Angeles • Newton (Mass.) • Branford (Conn.)
*trademark for DuPont tetrafluoroethylene resin

If you write maker identify as IEN-11328

How to CUT COSTS with Abrasive Belt Grinding . . .



Abrasive Belt Grinding does many milling, shaping, polishing and grinding jobs 30% *to* 80% *faster* than presently-used machines. Simplifies fixtures—often eliminates them entirely. Frequently saves 75% to 90% of former set-up time.

Let us prove that an Abrasive Belt Grinder can cut your machining costs. Send us sample pieces for recommendations—or ask to have one of our production engineers call to discuss your problems at your plant. Free 32-page case history booklet on request.

MODEL BGS/FT-9. Has automatic feed table. 9" wide belt. For precision surfacing on repeat operations. One of a complete line of contour, platen, bench, contact wheel, flexible belt, and centerless grinders.

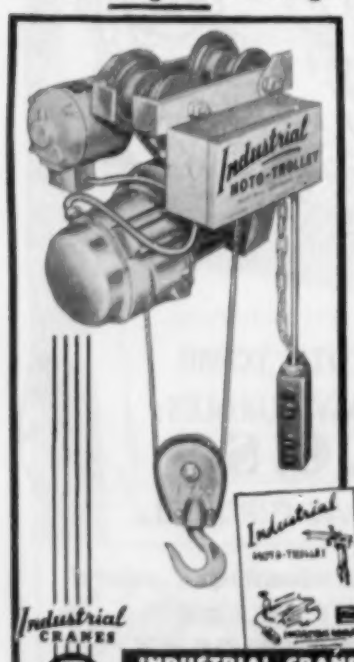
ENGELBERG

THE ENGELBERG HULLER CO., INC.
150 Seneca St.
Syracuse, N. Y.

Manufacturers of Porter-Cable Abrasive Belt Machines

If you write maker identify as IEN-11329

Industrial MOTO-TROLLEY
The Original Packaged Motor Driven Trolley



MAY BE ATTACHED TO YOUR STANDARD ELECTRIC HOIST . . .

Adjustable to Accommodate Wide Variety of Beam Sizes

- Crown-tread machine steel wheels with hardened drivers.
- Each wheel equipped with double-row precision ball bearings and removable-head axle with Alemite grease fittings.
- Powered by a crane-duty high-torque totally enclosed motor of 30 minute 55 degree rating.
- Magnetic contact panel has transformer to reduce voltage in single speed push button control circuit.
- 4-button control station operates single speed trolley and hoist motions.

Write for Literature

Industrial CRANES

INDUSTRIAL CRANE & HOIST CORPORATION
(formerly Industrial Equipment Co.)
321 NORTH ADA STREET CHICAGO 7, ILLINOIS
Overhead Cranes • Jib Cranes • Monorail Systems
Crane Runways
Representatives in Principal Cities

If you write maker identify as IEN-11330

Truck - Hydraulic fork lift with engine driven generator and motor

Source: BAKER-RAULANG COMPANY
1250 W. 80th St., Dept. IEN, Cleveland 2, Ohio

Electric transmission

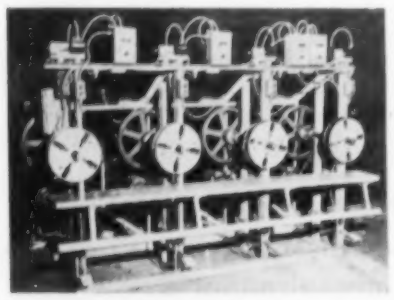
Model FD-50, rating 2½ ton, and Model FD-60, rating 3 ton, are new engine powered motor driven fork lift trucks. Power is supplied by a Hercules four cylinder engine and integral dc. generator to power a series motor mounted on the drive axle. The truck provides travel speed under load to 7½ mph. It lifts a rated load at 35 fpm. on the largest unit and 38 fpm. on the smallest one. Lowering is under control of a metering valve in each case.

Wheel base measures 54 in. Overall length, with 36-in. forks, is 122 and 124 inches. Width is 38 inches. The truck can be operated in 75-in. intersecting aisles. Lift and tilt movements are both by hydraulic pressure supplied by a continuous flow pump with speed controlled by a metering valve and excess by-passed to a reservoir. Service brakes are external contracting design on the motor shaft. Dynamic braking is standard. The controls permit high speed hoisting at low travel speeds.

If you write maker identify as IEN-11331

Winding - Multi-spindle machine to rewind wire on small spools

Source: DARE PRODUCTS CO.
860 Betterly Road, Dept. IEN, Battle Creek, Mich.



Built to order

Wire is taken from large rolls and is wound in measured lengths with this new machine. It is built to specification and will handle coils to 20 in. in outside diameter. It can be supplied with a level winding attachment for coils to 6 in. in outside diameter. The coil can be wound clockwise or counter-clockwise. Each completed coil can be removed quickly for replacement with an empty spool. The machine includes controlled slow start to eliminate backlash, shut off in the event of wire snarling, safety devices to prevent wire breakage.

If you write maker identify as IEN-11332

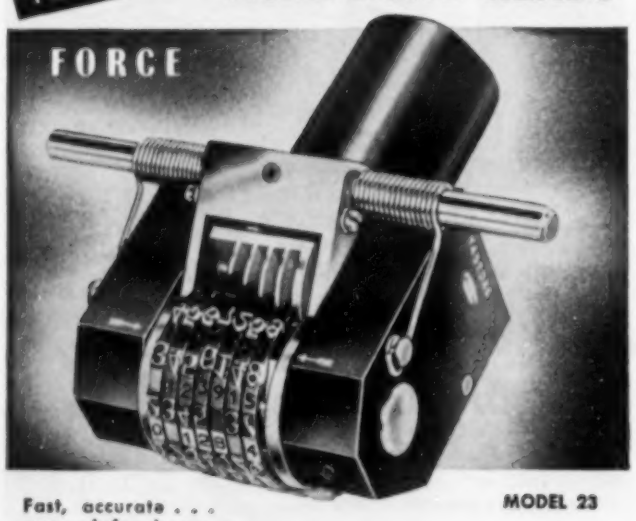
Phosite trade names a new ingredient in the "X-73" ice and snow melting chemical granular material manufactured by Monroe Co., 10703 Quebec Ave., Dept. IEN, Cleveland 6, Ohio. The material is scattered lightly over icy surfaces, in drains and gutters and under traction wheels. Packaging is in 100, 200 and 300-lb. fiber drums. Ton lots are shipped in 100-lb. water proof bags.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11333

NUMBERING IN METAL

indenting NUMBERING HEADS



Fast, accurate . . . rugged for heavy power press use. Figures from 1/64" to 3/8" or larger as required.

MODEL 23

Write for prices and catalog of all models.

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

If you write maker identify as IEN-11334

Du-Lite

"Gives our tools Sales Appeal"

BARNABY MFG. CO. of Bridgeport, Conn., reports: "Our close proximity to salt water has given us problems in rust prevention for many years. We have experimented with many black oxide finishes but none has proven as successful, safe, and inexpensive as DU-LITE—our tools have better sales appeal—our volume has been on the increase ever since we started using this modern, progressive oxide finish."

Depend on Du-Lite, the metal-finishing specialists, for the most efficient and economical cleaners, black oxide finishes and phosphate coatings. Write for full details on:

Du-Lite Black Oxide for Steel.
3-0 Black Oxide for stainless steel and malleable iron.
SD Compound for removing occluded salts.
Phosteel and Phospray for phosphatizing steel, iron or zinc.
Du-Lite Non-Acid Black Oxide for copper and copper alloys.
Dynakleen for bright cleaning all metals.
Kwikseal and Proctoil water displacing oils.

Or send us samples of parts and we will process them for your approval.

Du-Lite DU-LITE CHEMICAL CORP.
MIDDLETOWN • CONN.
METAL FINISHING SPECIALISTS

If you write maker identify as IEN-11335

ATTENTION: ELECTRIC TRUCK USERS

CHARGE BOTH EDISON AND LEAD-ACID BATTERIES WITH ONE MULTI-PURPOSE CHARGER

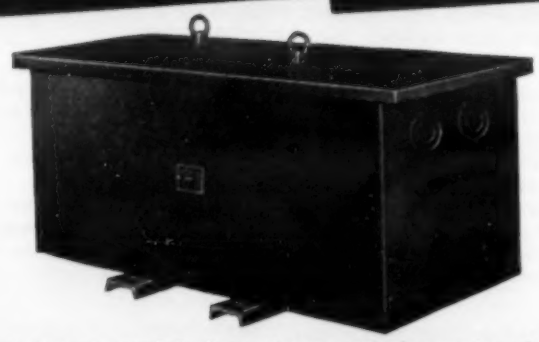
THE *NEW* HERTNER Model UX-2 MULTI-PURPOSE CHARGER simplifies charging problems and reduces costs. It permits standardization in charger facilities. Now it is possible to replace specific-purpose chargers with fewer Multi-Purpose Chargers. This charger can be converted quickly and easily from charging Edison batteries to lead-acid batteries, and back again. Ease of conversion also applies to changing from one size of battery to another—both lead-acid and Edison types. All of the latest features of automatic control and protective devices are found in this newest Charg-O-Matic unit.

For full details and specifications write for Bulletin 210
IMMEDIATE DELIVERY
LOOK TO HERTNER FOR THE LATEST IN BATTERY CHARGERS

THE HERTNER ELECTRIC COMPANY
12690 ELMWOOD AVENUE . . . CLEVELAND 11, OHIO
A General Precision Equipment Corporation Subsidiary
MOTORS • MOTOR GENERATORS • GENERATOR SETS

If you write maker identify as IEN-11336

3 PHASE TRANSFORMERS 3 KVA THRU 750 KVA



Next time you need 3 phase, dry type transformers in a hurry, check the performance data, practical mechanical features, as well as the price of Acme Electric dry type transformers. Stock sizes from 3 thru 750 KVA, all standard primary voltages up to and including 5 Kv. There's a Service Dealer with stock on hand — as close as your telephone.

ACME ELECTRIC CORPORATION
MAIN PLANT: 2610 WATER STREET • CUBA, N. Y.
West Coast Engineering Laboratories: 1375 W. Jefferson Blvd. • Los Angeles, Cal.
In Canada: ACME ELECTRIC CORP. LTD., 50 North Line Road • Toronto, Ont.

Acme ACME Electric
TRANSFORMERS

If you write maker identify as IEN - 11337

Cut out needless re-roping costs

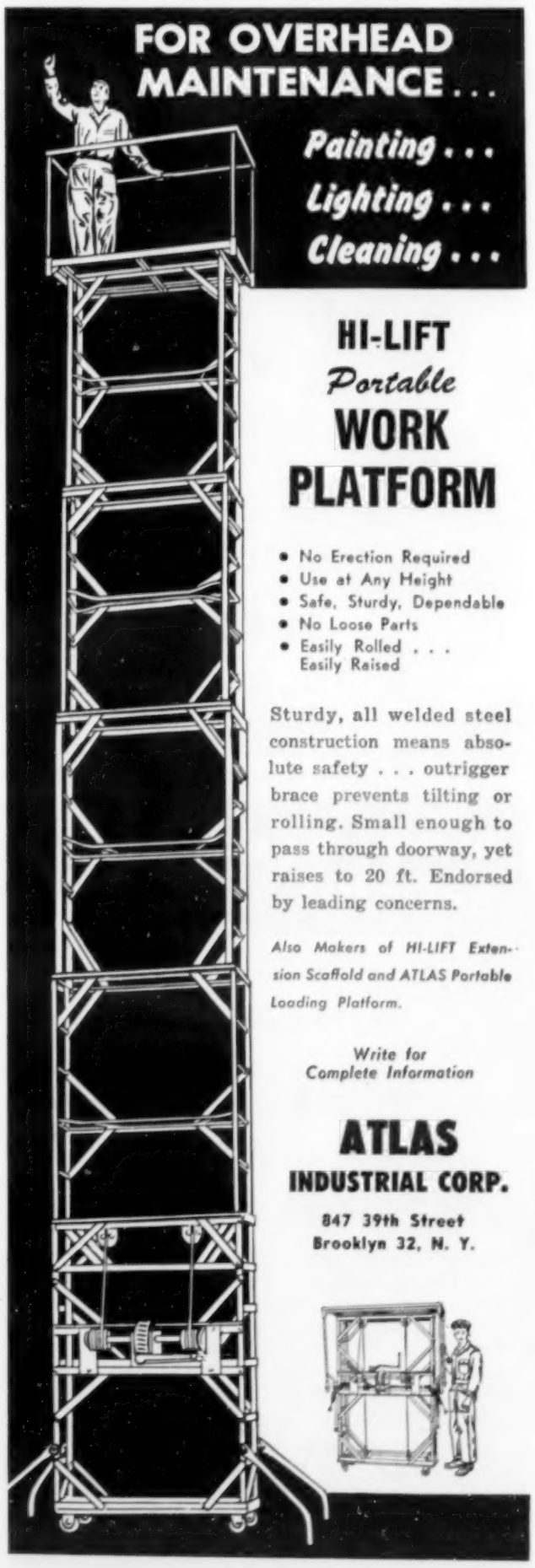
USE ELECTROLINE WIRE ROPE FITTINGS

In minutes, ordinary labor can install Electroline fittings that will hang on for all time. Prolong wire rope life by damping vibration stresses thus eliminating wire rope fatigue at the fitting. Write for Electroline Catalog. It points out many savings—no cost.

Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

If you write maker identify as IEN - 11338

FOR OVERHEAD MAINTENANCE...



HI-LIFT *Portable* WORK PLATFORM

- No Erection Required
- Use at Any Height
- Safe, Sturdy, Dependable
- No Loose Parts
- Easily Rolled . . . Easily Raised

Sturdy, all welded steel construction means absolute safety . . . outrigger brace prevents tilting or rolling. Small enough to pass through doorway, yet raises to 20 ft. Endorsed by leading concerns.

Also Makers of HI-LIFT Extension Scaffold and ATLAS Portable Loading Platform.

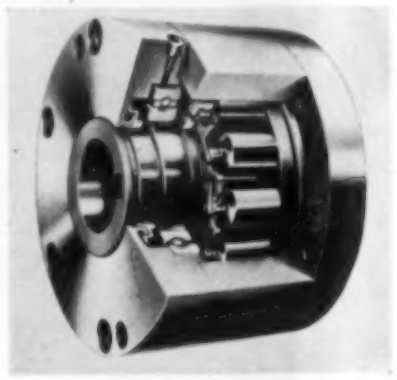
Write for Complete Information

ATLAS INDUSTRIAL CORP.
847 39th Street
Brooklyn 32, N. Y.

If you write maker identify as IEN - 11340

Drive - One-way clutch to back stop, index, permit over run

Source: MORSE CHAIN CO.
7601 Central Ave., Dept. IEN, Detroit 10, Mich.



Bulletin B20-53

The inner race in this new Series-K one-way clutch is toothed to "pocket" the inner faces of a ring of independently sprung closely spaced cams. The new design is similar in other characteristics to the company's previously developed Kelpo overrunning clutch. Four standard sizes measure 8¾ to 15 in. in outside diameter by about 6 to 8½ in. in length.

The smallest will take shafts to 2½ in. in diameter. The largest can be bored to 5 inches. Torque rating is 1,300 to 8,000 ft. lb., in indexing service, and from 3,000 to 20,000 ft. lb. in back stopping operation. Weight is 83 to 365 pounds. Nominal over-running drag is 18 to 60 in. lb. at 1,750 rpm.

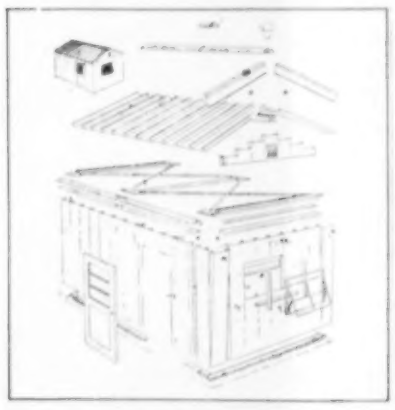
The cams have a gear tooth area on their inner faces and a cam surface on their outer faces. They are made of ball bearing steel. Individual springs hold each cam in light contact with the inner driving and the outer driven members. Spring retainer lugs, on a floating retainer, provide stops against the gear teeth on the driving member. The inner and outer assemblies are ball bearing mounted and are sealed to enclose the required lubricant.

Threaded holes are provided in both ends of the assembly to attach a sprocket, gear, pulley or ratchet arm. Desired direction of rotation is obtained by attaching the component to one side or the other.

If you write maker identify as IEN - 11341

Building - Sectional steel design, quick erection, singly or in multiple

Source: ARMCO DRAINAGE & METAL PRODUCTS INC.
3594 Curtis St., Dept. IEN, Middletown, Ohio



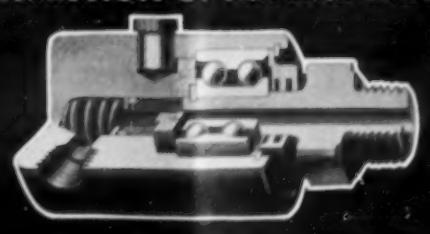
Interlocking panels

Illustrated is an "exploded" drawing of an Armco steel building showing details of the Steelox parts. The company announces that its Series-S Type-3 40-ft. building is now available in heights to 20 ft. and in a design that permits units being placed side by side for a desired floor area. Length is in multiples of 20 ft. with minimum at 40 feet. Height is 10, 12, 14, 16 or 20 feet. The building is available with ridge ventilators, ceilings. Sliding doors close tightly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11342

FAWICK ROTORSEAL PROVIDES TROUBLE-FREE TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

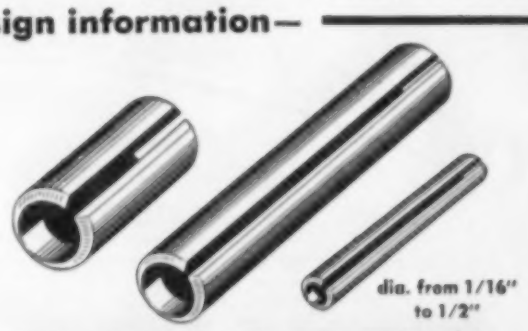
FAWICK AIRFLEX DIVISION
FEDERAL FAWICK CORPORATION
9919 CLINTON ROAD
CLEVELAND 11, OHIO

Write for ROTORSEAL Bulletin ML-6.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

If you write maker identify as IEN - 11343

Design information—



ROLLPIN

. . . the slotted tubular steel pin with chamfered ends

- Easily driven into holes drilled to normal production tolerances
- Self-locking . . . exerts constant pressure against hole walls
- Easily removed with drift or pin punch
- Fits flush . . . is reusable

Offers assembly-time savings over rivets, set screws, straight, serrated or cotter pins, dowels, hinge pins and many others.

WRITE for detailed catalog—Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, N. J. Address Dept. R18-1053.

If you write maker identify as IEN - 11344

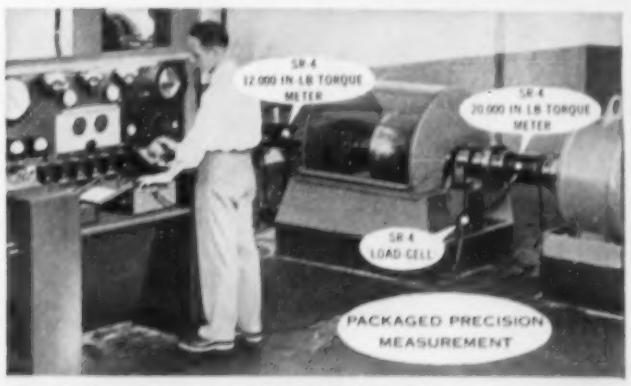
COUNT BY WEIGHT

Control Costs with New TOLEDOS

These new Counting Scales eliminate slow, tedious hand counting of parts . . . count hundreds of parts *accurately* in a few seconds! Complete line—for issuing predetermined quantities . . . counting unknown quantities . . . for faster inventory counts . . . or to get accurate receiving, shipping, and piece-work counts. Choice of double and triple ratio combinations. Send for booklet. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO®
HEADQUARTERS FOR SCALES

If you write maker identify as IEN - 11345



NATIONAL SUPPLY MEASURES TORQUES AND THRUSTS ACCURATELY AND EASILY WITH SR-4® SYSTEM

At their Toledo plant National Supply Company is using Baldwin SR-4 Torquemeters and Load Cells to measure torques and thrusts in development of torque converters. They report the torquemeters are both accurate and convenient in measuring the efficiency of their new converters. Calibrations of load cells resulted in satisfactory reports.

By using Baldwin's SR-4 Torque Measuring System, National Supply benefits in three ways: (1) *reliable accuracy* over wide torque range. (2) *convenience* from easy mounting. (3) *trouble-free operation* due to rugged construction and absence of moving parts.

You will profit, too, by using *Baldwin Packaged Precision Measurement*. Write now for our new booklets which will tell you how you can benefit by using SR-4 Device systems to measure electronically either load, torque or fluid pressure. Write to Dept. 3313, Baldwin-Lima-Hamilton Corp., Philadelphia 42, Pa.

BALDWIN-LIMA-HAMILTON
General Offices: Philadelphia 42, Pa. • Offices in Principal Cities
In Canada: Peacock Bros., Ltd., Montreal, Quebec

If you write maker identify as **IEN - 11346**

. . a telephone booth that

Cuts outside noise 50%

the Hear Here
ACOUSTI-BOOTH
$100

Try it! . . you risk only shipping charges

Order an Acousti-Booth today . . if you're not completely satisfied, return it for a *full refund*. You pay only the shipping charges.

The walls of thick, sound absorbing material make telephoning like talking from a private office. And this Acousti-Booth takes less room than a large wall calendar. Attractive gray, hammered finish steel exterior.

$100 F.O.B. Chicago, Model 45. If you want light fixture, add $9.

Ask for Bulletin A-131

ACOUSTI-BOOTHS
Burgess-Manning Company, Architectural Products Div.
5970 Northwest Highway, Chicago 31, Ill.

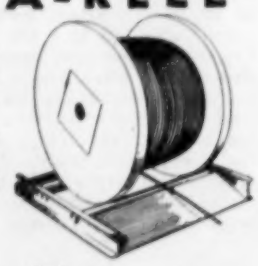
If you write maker identify as **IEN - 11347**

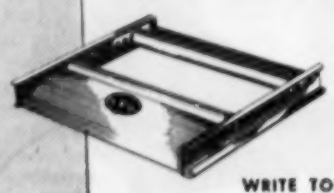
Time to Discard
OLD-FASHIONED WAYS

Jacks . . props . . shores . . horses . . why fool with these obsolete methods of handling reels? DO IT THE MODERN, EFFICIENT WAY! Reel or unreel wire, cable, rope with

ROLL-A-REEL

Simple, strong, easily handled stand for your reels to save time and labor. Adjustable slots for wide variety of reel sizes.





Style A:
2,000 lbs. cap. 37.50
Style B:
4,000 lbs. cap. 75.00
F.O.B. Cincinnati

WRITE TODAY FOR DETAILS

ROLL-A-REEL
1100 SYCAMORE AT CENTRAL PARKWAY
CINCINNATI 2, OHIO

If you write maker identify as **IEN - 11348**

AURAND
CLEANING TOOLS
ELECTRIC OR PNEUMATIC

Zip away
SCALE RUST PAINT

Powerful rotary chipping action completely removes stubborn accumulations from iron, steel, brick, concrete, etc. with less effort. Adjustable depth shoe for controlling depth of cut. Renewable cutter heads. Two sizes in both electric and pneumatic models. Lightweight.

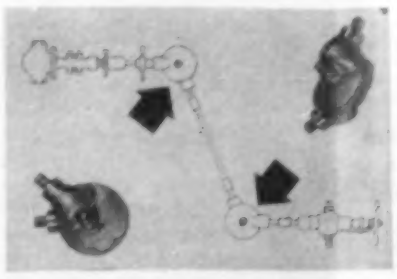
Write Dept. 649 for the money-saving facts.

AURAND MFG. & EQUIP. CO.
2643 Colerain Ave. • Cincinnati 14, Ohio

If you write maker identify as **IEN - 11349**

Drive - Adjustable geared joint transmits torque around obstructions

Source: STOW MFG. COMPANY
25 Shear St., Dept. IEN, Binghamton, N. Y.



A valve installation

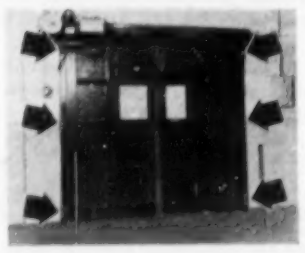
Bevel gears are assembled in a two-part swivel housing in this new geared joint. Stub shafts are extended for connection to flexible shafts or to "reach" rods. Torque can be transmitted from a hand wheel or driving mechanism at one end to a unit of equipment, such as a valve, in a remote location. One or more joints can be employed to reach around obstructions.

Each joint can be adjusted in one plane through a complete circle. Three sizes in the line rate 500 to 3,500 in. lb., take flexible shafts or rods measuring from ½ to 1⅝ inches.

If you write maker identify as **IEN - 11350**

Door - Power operated design mounts swing panels on Timken bearings

Source: CLARK DOOR CO.
515 Hunterdon St., Dept. IEN, Newark 8, N. J.

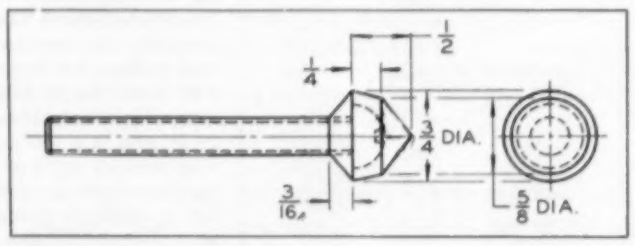


For heavy duty

The company announces development of a new roller bearing hinge for its Prest-O-Matic power operated doors. The new hinge assures continuous duty even though lubrication is neglected. Each employs a 3 by 14-in. leaf and a ⅝-in. pintle shaft. Load is taken on a Timken double thrust bearing measuring 1¼ in. in outside diameter. Each bearing will support a load of approximately 1,200 pounds.

If you write maker identify as **IEN - 11351**

Pointed rubber tip is molded on a 5/16-in. machine screw to produce a pressure foot for the toggle clamps made by West



Point Mfg. Co., 26935 W. 7-Mile Road, Dept. IEN, Detroit 19, Mich. The rubber remains in place and applies pressure without marring soft materials or polished surfaces. It improves the action of the previous separate rubber tip that was slipped over the end of a stud or bolt.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 11352**

If you write maker identify as **IEN - 11353**

good idea!

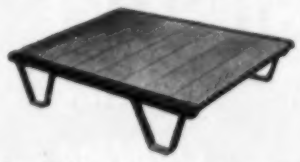
CUT HANDLING COST UP TO 50% by "escalating" materials floor to floor with an ARR-O-VEYOR power belt unit. Moves the goods smoothly, continuously, up or down — saving time, money, effort and floor space. From receiving dock to second floor far corner, 1600 cases in 1½ hours! Combine it with Gravity Conveyor for complete conveyor system. Available in 12", 16", 20" or 24" belt widths, from 10' thru 40' in length, motors from ¾ HP thru 3 HP. Shipped as complete unit ready to install.

Full facts on all ARROW power and gravity conveyors. Write to:

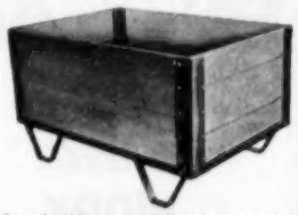
arrow PRODUCTS, INC.
110 Arrow Bldg. 417 Front, N.W. Grand Rapids, Mich.

If you write maker identify as **IEN - 11354**

In production or in storage
IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid built to handle loads up to 5 tons.



Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

Ironbound

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as **IEN - 11355**

Metal hose variety!

Consult PACKLESS on your flexible metal hose requirements — a complete line stocked for every industrial need — Bronze, Stainless steel and Carbon steel available for high or low temperature usage. Fittings are soldered, brazed, welded, or mechanically applied. Write for industrial folder.

PACKLESS
METAL HOSE INC.
31-40 WINTHROP AVE. • NEW ROCHELLE, N. Y.

If you write maker identify as **IEN - 11356**

FASTEST CUTTING for Weld Grinding

FIBREX

REINFORCED RESINOID WHEELS

Let these amazing wheels speed your weld grinding jobs . . . actually cut away excess metal. Send for catalog ESA 186 and ask for demonstration on your job.

SIMONDS ABRASIVE CO., Philadelphia 37, Pa.

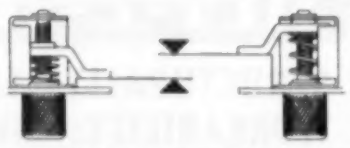
Division of Simonds Saw and Steel Co.

DISTRIBUTORS IN PRINCIPAL CITIES

BRANCH WAREHOUSES: BOSTON, DETROIT, CHICAGO, PORTLAND, SAN FRANCISCO

If you write maker identify as **IEN - 11357**

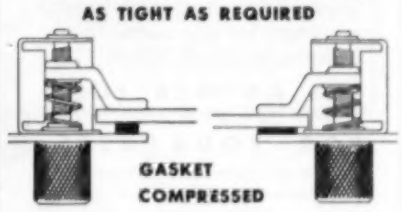
a family of door fasteners with



ACCOMMODATES VARIATIONS IN FRAME THICKNESS UP TO 1/2 INCH

BIG ADVANTAGES

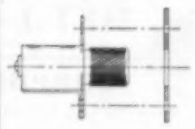
GRIP PRESSURE . . . AS LIGHT OR AS TIGHT AS REQUIRED



GASKET COMPRESSED

. . . ¼ turn closes, additional turning tightens

PRE-ASSEMBLED, QUICKLY INSTALLED



. . . just drill 3 holes, apply 2 rivets or bolts

TWO STYLES, THREE BASIC SIZES . . .

PROTRUDING HEAD FLUSH HEAD

Get the complete story of Southco Pawl Fastener advantages. Write today for your copy of the Southco Fastener Handbook. Southco Division, South Chester Corporation, 241 Industrial Highway, Lester, Pa.

© 1954

SOUTHCO

FASTENERS

PAWL · SCREW AND SPRING · DRIVE RIVETS
ANCHOR NUTS · ENGINEERED SPECIALTIES

OFFICES IN PRINCIPAL CITIES

WHEREVER TWO OR MORE PARTS ARE FASTENED TOGETHER; STANDARD AND SPECIAL DESIGNS FOR IMPROVED PERFORMANCE AND LOWER PRODUCTION COSTS

If you write maker identify as **IEN - 11359**

Mar Proofing - Self-adhering tape to protect finished metal surfaces

Source: MINNESOTA MINING & MFG. CO.
900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

Strips clean

No-Mar No. 344 is a new black paper tape for application over polished and finished metal surfaces. It protects against scratches and die marks during and after fabrication, shipment and storage. A film-like adhesive, on the tape, adheres upon contact to stainless steel, aluminum, glass, most plated metals, plastic glass, polystyrene and polyester. The black paper backing resists abrasion. Protected metals can be stored out of doors without damage to their surfaces.

The tape is available in 100-yd. rolls and in widths measuring 12, 24 and 36 inches. It is offered in addition to the previously developed No. 343 tape which is suited for work not requiring weather resistance.

If you write maker identify as **IEN - 11360**

Cleaning - White emulsion for toilet bowls, porcelain surfaces

Source: HUNTINGTON LABORATORIES INC.
Dept. IEN, Huntington, Ind.

Prices, details upon request

Sani-Tate is a new milky white emulsion to remove encrustations of lime, rust deposits and to eliminate odors from toilet bowls, urinals, wash basins, porcelain walls so they can be kept in sanitary condition, clean smelling and brightly polished. The emulsion contains a solvent that flushes away organic particles, grease, oil and gummy sludge. It will not attack porcelain. Packaging is in quarts and half-gallon containers, 12 bottles to a case with six swabs included.

If you write maker identify as **IEN - 11361**

Drive - Magnetic disc brake for use on 3 to 20 hp. motors

Source: STEARNS MAGNETIC INC.
626 S. 28th St., Dept. IEN, Milwaukee 46, Wis.

Details on request

Series H-70 designates a new brake developed by the company to apply on re-rated 3 to 20-hp. motors. The mechanism is available in maximum torque ratings from 10 to 105 foot pounds. It is designed to mount on the new frame sizes 213 to 286. It features manual release with an automatic reset wear indicator. The spring set solenoid release assembly is available for horizontal and vertical motor mounting or for independent floor mounting. It can be specified with a standard or a waterproof enclosure.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 11362**

NEW!

jari Champion rotary SNOW THROWER

...handles the BIG JOBS

We've built a new Jari for factories, institutions, commercial firms, large estates, etc. . . . to handle the big snow removal jobs *faster*. Easy to operate, quick to finish, does the work of 10 men with hand shovels . . . that's the new Champion . . . opens up walks, platforms, driveways, parking areas and other areas *in minutes*. Find out now what the Champion Snow Thrower will do for you!

★EFFICIENT ROTARY ACTION! *throws snow, doesn't blow it*

★PROPELS ITSELF AHEAD! no pushing necessary

★CLEARS 20" SWATH! through drifts 20" deep

★JARI RAKER BAR! chews hard-packed snow

★NO-CLOGGING FRONT! handles heavy or slushy snow

★RUGGED 2½ HP. ENGINE! handles big jobs, faster

★YEAR 'ROUND ATTACHMENTS Sickle Bar Mower, Reel Mower, Sprayer, Garden Tiller

At your Jari dealer...or write! Your inquiry promptly answered

jari PRODUCTS, INC.

2938-J Pillsbury Avenue • Minneapolis 8, Minn.

If you write maker identify as **IEN - 11363**

This efficient "iceman" is a Cyclone Belt!

• A Cyclone Flat Wire Conveyor Belt is now acting as a modern "iceman" in automatic ice vending machines. When a customer deposits the right change in this machine, the mechanism places the customer's order on the Cyclone Belt which is then motor-driven to deliver the order. This arrangement, dependent upon the unfailing services of the Cyclone Belt, saves money and manpower, permits 24-hour service.

There's no end to the time and money saving applications for Cyclone Conveyor Belts. Don't overlook any operations in *your* plant or shop where the right Cyclone Belt could take over a costly manual job. One of our experienced sales engineers will gladly help you. And write to Dept. C-104 for your free copy of our idea-packed Catalog #5.

USS CYCLONE

METAL CONVEYOR BELTS

SPIRAL WOVEN • FLAT WIRE • FLEX-GRID

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

UNITED STATES STEEL

If you write maker identify as **IEN - 11364**

IF you are designing products with components like these . .

the LAPMASTER will provide you with possibilities for product improvement through precision flatness and finish

The Lapmaster is an amazingly versatile machine, capable of generating surfaces of precision flatness and finish in short runs or in high production quantities. The illustration above indicates the wide range of parts and materials that can be handled on Lapmasters. Parts include materials such as monel, steel, tool steel, bronze, cast iron, stainless steel, quartz, ceramics, plastics, carbides, etc.

Manufacturers of all types of products have found that by specifying lapped finish they have been able to improve product performance. Precision flatness and finish on a production basis is easily obtained with the Lapmaster. Tolerances of .0000116" or less—micro-inch finishes of 2 to 3 RMS can be maintained consistently.

You can improve performance of your product, reduce its overall cost by specifying Lapmaster flatness and finish.

Learn about the possibilities of production lapping and the subject of measuring flatness. The illustrated fact filled booklets are yours for the asking.

Lapmaster MACHINES

Crane Packing Co., Dept. IEN-10, 1815 Cuyler Ave., Chicago 13
In Canada: Crane Packing Co., Ltd., 617 Parkdale Ave., N. Hamilton, Ont.

CRANE PACKING COMPANY

"Protected by U. S. and Foreign Patents"

If you write maker identify as **IEN - 11365**

LOGAN AIR AND HYDRAULIC POWER

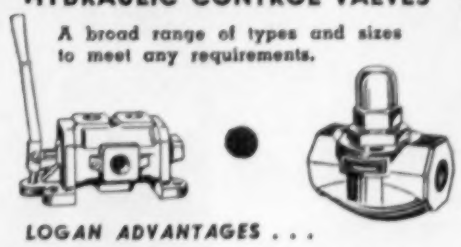
SPEEDS • COORDINATES • REFINES PRODUCTION
IN OVER 10,000 INDUSTRIAL PLANTS

AIR CYLINDERS • AIR-DRAULIC CYLINDERS • AIR and HYDRAULIC PRESSES • COLLET GRIP TUBE FITTINGS • Sump Pumps • SURE-FLOW COOLANT PUMPS • HYDRAULIC POWER UNITS • HYDRAULIC CYLINDERS • HYDRAULIC CONTROL VALVES • AIR ENGINES • AIR CONTROL VALVES

Logan

HYDRAULIC CONTROL VALVES

A broad range of types and sizes to meet any requirements.



LOGAN ADVANTAGES . . .

- Ease of Installation
- Effortless Operation
- Long-Life Construction
- Unrestricted Porting
- Easy to Service
- Infrequent Maintenance

SAVES TIME Logan AIR AND HYDRAULIC EQUIPMENT

LOGAN MANUFACTURES 6,975 STANDARD CATALOGED ITEMS • CATALOG ON REQUEST

Let Logan Engineers help you design your Air and Hydraulic Circuits.

LOGANSPORT MACHINE CO., INC.
813 Center Avenue Logansport, Indiana

If you write maker identify as IEN - 11366

Performance Proves 20% to 90% LESS VIBRATION with Veelos—the Balanced V-Belt

REGULAR v-belts have spots of varying density due to their construction. Normally, these spots are not apparent, yet they throw the belt out of balance when the drive is operating. As a result, vibration is created that can damage bearings, shafts and, most important, the finished work.

This is not true of Veelos v-belts.

Veelos is absolutely uniform throughout its entire length. Every link and stud is identical. The smooth, machine-cut sides and the laminated construction assure smooth, vibrationless power delivery. Veelos is perfectly balanced.

In case after case, installation of Veelos v-belts has reduced machine vibration 20% to 90%.

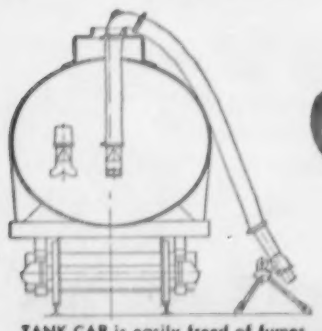
Proof that Veelos will reduce vibration can easily be demonstrated with an electronic vibration analyser. This analyser measures amplitude of vibration to as low as 2-millionths of an inch.

Fifteen minutes of your time is all that is required to show you with the electronic analyser that Veelos creates less machine vibration. Drop us a line for a demonstration.

MANHEIM MANUFACTURING & BELTING COMPANY
651 Manheim Street, Manheim, Pa.

Veelos is known as Veelink outside the United States

If you write maker identify as IEN - 11367



TANK CAR is easily freed of fumes for workers' safety.

CHEMICAL STILL is here ventilated while being repaired.

KEEP AIR FRESH

in confined places with COPPUS *Design "A" Ventilator*

Improve workers' safety—health—comfort—efficiency. Get rid of dangerous gases, fumes, stagnant air. Coppus Design "A" Ventilator ventilates tanks, tank cars, drums, vats, underground cable manholes, pipe galleries, airplane wing compartments, fuselages. For complete information, write Coppus Engineering Corporation, 150 Park Ave., Worcester 2, Mass. Sales Offices in *Thomas' Register.*

Other "Blue Ribbon" Products in *Chemical Engineering Catalog, Refinery Catalog, Best's Safety Directory* and *Mining Catalogs.*

ANOTHER COPPUS "BLUE RIBBON" PRODUCT

If you write maker identify as IEN - 11368

Cut Grease and Labor Costs

Kent's new K-22 heavy-duty floor machine has the rugged capacity to cover a 22-inch width of floor section with every sweep of the machine. Heavy grease accumulations can be *dry-scrubbed* with a special multiple brush. Unit can also be used for wet scrubbing.

Kent's famous Offset Motor Design permits faster and better work . . . causes less fatigue . . . and cuts maintenance costs.

KENT PIONEER IN MAINTENANCE EQUIPMENT SINCE 1913

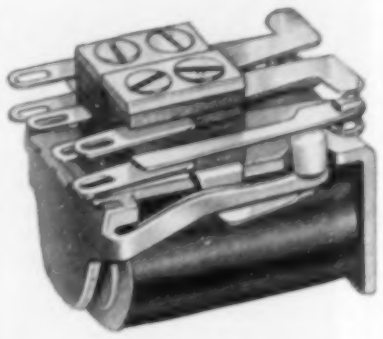
KENT CO., INC., 437 Canal St., Rome, N. Y.
Send immediately complete literature on Kent Floor Machines; also information on Industrial Vacuum Cleaners.

Firm Name.....
My Name.....
Address.....
City..... State.....

If you write maker identify as IEN - 11369

Relay - Multiple contact unit, custom engineered to specification

Source: COMAR ELECTRIC CO.
3349 W. Addison St., Dept. IEN, Chicago 18, Ill.



Telephone type

Contact combinations are to 6 pole single throw in open design of this new Type-TS multiple contact dc. relay. Combinations to 4 pole double throw are available in a sealed design. Contacts are made of silver and are rated at 3 amp. on 28-volt dc. or 1 amp. on 110-volt ac. Life expectancy is minimum at 1,000,000 cycles. The windings are insulated to withstand 1,000-volt ac. The metal parts are plated to resist corrosion.

The relay is available with coils rating to 125-volt dc. or 6,500 ohms. The assembly will withstand vibration to 10G at 5 to 500 cycles per second and shock or acceleration to 50G. Ambient operating temperature range is from minus 55 to plus 85 deg. C.

If you write maker identify as IEN - 11370

Counting - Electronic instrument counts events at 100,000 per second

Source: DETECTRON COMPANY
5420 Vineland, Dept. IEN, North Hollywood, Calif.

Accurate to 0.1 per cent

Type DS-6100 is a new five-unit assembly of the company's electronic decade previously described IEN-11681-51. The instrument will count and display any electrical or mechanical event that can be converted into varying voltage of sufficient amplitude for a counting speed between 20 and 100,000 events per second. The assembly includes automatic and manual reset, self-checking action, display from 0.5 to 6 sec. duration, plug-in decade design. The mechanism is fan cooled.

Overall dimensions are 14¼ by 13½ by 7½ inches. Weight is 28 pounds. Available accessories include a tachometer pick-up and a photocell. The time base consists of a 100-kc. crystal controlled oscillator with five stable divider stages.

If you write maker identify as IEN - 11371

Lexsuco, Inc., 4815 Lexington Ave., Dept. IEN, Cleveland 3, Ohio, has assembled a "package" of materials and equipment for a roof job in repair of flashings, gutters, cracked or blistered felts and ordinary weak spots. Details of the contents of the package and instructions for the repair application are contained in a bulletin, "Lexsuco Roof Maintenance Package."

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 11372

A.C.M.I. BORESCOPES

for close-up visual inspection of internal surfaces and hidden parts

A.C.M.I. Borescopes are available in 4 angles of vision (as above)—in diameters of .120" to 4.00"—in lengths of 4" to 720". Special models for special problems.

A.C.M.I. Borescopes permit close-up visual examination of interior areas and surfaces not otherwise visible. They save time and money, and prevent costly dismantling. • Each Borescope is a compact, self-illuminated industrial telescope of highest quality, employing a precision optical system, that produces a flat visual field. Lens systems are fully corrected for color, spherical aberrations, and coma, with all lens surfaces coated to increase light transmission.

Write for free informational folder, or tell us your problem.

American Cystoscope Makers, Inc.
1241 LAFAYETTE AVENUE NEW YORK 59, N. Y.

If you write maker identify as IEN - 11373

NOW..."flexible piping" with TEFLON's heat and corrosion resistance

FLUOROFLEX†-T assemblies combine the outstanding advantages of Teflon* with those of flexible conduit construction. Here's what this gives you:

- Fluoroflex-T (Teflon compound) tube . . . chemical-proof, non-swelling . . . absorbs vibration
- Flexibility that doesn't change from −100° to +450°
- Stainless steel braid—for 1000 psi working pressures and for high external corrosion resistance
- Compact fittings swaged to armor and tube—won't blow off
- Light weight! Space saving! Non aging!

Write for Bulletin FH-1.

**DuPont trademark for its tetrafluoroethylene resin.*
†Resistoflex trademark for products from fluorocarbon resins.

RESISTOFLEX *corporation*
Belleville 9, New Jersey

If you write maker identify as IEN - 11374

MET-L-WOOD
METAL BONDED TO PLYWOOD

STRUCTURALLY: Like STEEL
WORKABILITY: Like WOOD

● A Met-L-Wood panel ⅛" thick has the same stiffness as a ¼" steel plate—yet weighs only one-third as much! Add to these facts: excellent workability without special tools, inherent sound-deadening, insulating and vibration-damping qualities . . . and smooth, clean surfaces that withstand hard wear, water, and weathering. Isn't there a place for versatile Met-L-Wood in your product planning? Details are yours for the asking in the bulletin described below.

THE ANSWER BOOK ON MET-L-WOOD FOR YOUR USES

Met-L-Wood Bulletin 521 contains 16 pages of technical data, facts and photos to give you a clear, accurate picture of Met-L-Wood characteristics, uses and possibilities. Write for your copy today.

MET-L-WOOD CORPORATION
6755 West 65th Street, Chicago 38, Illinois

If you write maker identify as IEN - 11375

REDUCE LIGHTING COSTS 30% to 60% WITH CEILITE

Translucent, Lightweight, Shatterproof Structural panels reinforced with fiberglass

✓ Glare-Free Daylight

Ceilite panels diffuse the sun's rays and spread approximately 80% of the natural light throughout your plant—adding to visual comfort and efficiency.

✓ Easy to Install

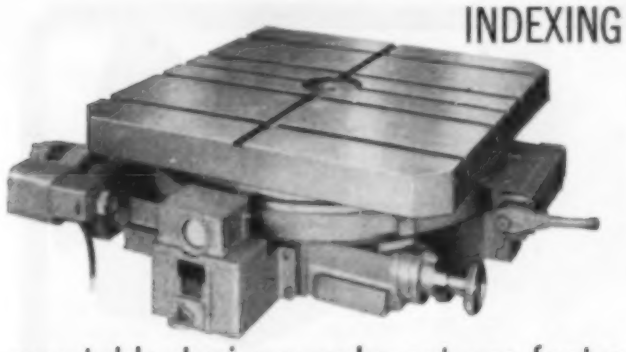
Ceilite panels are easily installed in new or existing buildings with standard fasteners. No special framing is needed, since Ceilite nests with all standard corrugated building panels.

Free sample and descriptive folder available on request. Write today.

CEILITE *Corporation*
Box 278 • Allison Park, Pa.

If you write maker identify as IEN - 11376

INDEXING



new table designs make set-ups faster

Gilbert's new revolving tables cut costly set-up time in boring, drilling, milling operations. *Above:* 36" square table with power rapid revolving controlled by push button, operates through worm and worm wheel. On base, with top graduated to read in ½°. Hand wheel graduated to 1 minute. Dial indicator indexing with 4 adjustable positions (additional positions can be furnished). Angular type ring clamp, single lever operated. Timken bearings on kingpin. Pressure lubrication. *Worm-feed tables:* 36", 50", 60", and 72" square or round. *Hand-indexing tables:* 36" and 50" square or round, with positive index stops.

GILBERT

THE CINCINNATI GILBERT MACHINE TOOL CO.,
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

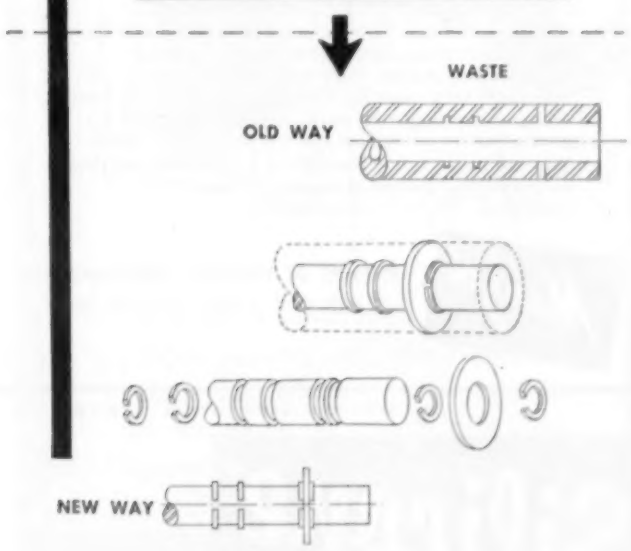
Write for Bulletin 854A

If you write maker identify as IEN - 11377

Examine the design of your products and machines...

No doubt you too can save time—save materials—and increase your profits by using

NATIONAL RETAINING RINGS



There are literally thousands of places where retaining rings will *save*, ranging from simple applications on tools, toys, small parts and gadgets to complicated heavy duty engines, large drill presses, etc., etc.

And in addition to this economy, they *improve* your products. It is wasteful to cut down shafts to make shoulders. Redesign to groove *smaller* shafts and housings and use these high-grade steel rings.

Let our engineers consult with you. Send today for folders.

Don't pass up this opportunity to increase profits.

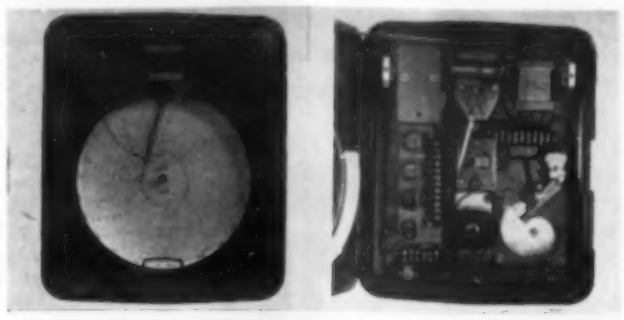
THE NATIONAL LOCK WASHER CO.

NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN, U. S. A.

If you write maker identify as IEN - 11379

Signaling - Telemeter instruments to record remote process variables

Source: FOXBORO COMPANY
14 Neponset Ave., Dept. IEN, Foxboro, Mass.



Technical data 33-A-85a

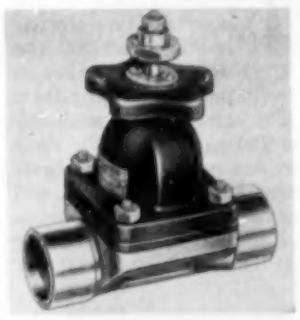
Liquid level, fluid movement and pressure, intra-plant control signals, can be measured and transmitted through distances to 150 miles by the company's new Impulse Duration telemetering instruments. The signal is transmitted at 12-sec. intervals by wire or over a radio link or microwave channel. The transmitted pulse is received and its duration is compared to that of the previous pulse to actuate a reversible motor. This motor positions a recorder pen or indicator pointer to reflect any measurement change.

A suitable sensing element is employed at the point of variation in the process to actuate the transmitter. A power pack supplies the required dc. energy for the transmitted signal. The receiver converts the signal to a record of the measurement. Input to the two instruments is on 110-volt ac. Transmitter and receiver are assembled in rectangular aluminum housings equipped for surface, flush or portable mounting.

If you write maker identify as IEN - 11380

Valve - Aseptic diaphragm design for use in antibiotic process lines

Source: HILLS-McCANNA COMPANY
3025 N. Western Ave., Dept. IEN, Chicago 18, Ill.



Sanitary

New design of the Saunders Patent diaphragm valve provides an assembly that can be steam bled to maintain aseptic conditions required by antibiotic processors. The valve employs diaphragm stock Type S-3 which is particularly suited to this type of service. It can be provided with steam or bleed holes at any of six points. The valve interior is finish ground around the diaphragm port areas and the weir. Then it is electro-polished inside and out. Six sizes range from ½ to 3 in. with either butt-weld or bored end connections. Operating pressure range is from 25 to 50 lb. with maximum temperature at 230 to 240 deg. F.

The rising stem is equipped with an adjustable positive stop above the hand wheel so the diaphragm cannot be pinched excessively when the valve is turned to closed position. Shoulder studs are employed between the bonnet and body to limit assembly compression on the diaphragm.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11381

UNITABLE®

BELT CONVEYOR

For Assembly - Inspection - Packaging

Most versatile slider-bed belt conveyor you can find. 10′ to 80′ lengths. Integrated Power-Pac drive saves money in initial cost, upkeep and performance.

CONVEYOR SPECIALTY COMPANY INC.
35 Newport Avenue
North Quincy 71, Mass.

If you write maker identify as IEN - 11382

For factory floors that will not chip . . .
For skid-proof walks where feet won't slip . . .
On all machines that you equip . . .
For floors complete or center strip . . .
Use safe, long-lasting MULTIGRIP!

U·S·S multigrip

FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 3-1274

UNITED STATES STEEL

If you write maker identify as IEN - 11383

LAMSON EXIDUST

CENTRAL VACUUM CLEANING SYSTEMS

Clean without clutter—Lengthen machine life—Better working conditions

Get ALL the facts...requirements, schematic layouts, dimension and application tables, installation drawings, photos, and lots more ...in the Lamson Exidust System Catalog—*yours for the asking!*

LAMSON CORPORATION
2110 Lamson St., Syracuse 1, N. Y.

LAMSON

Plants at Syracuse and San Francisco

If you write maker identify as IEN - 11384

100th ANNIVERSARY 1854 — 1954

Specify **CLARK**

QUALITY INDUSTRIAL FASTENERS SINCE 1854

BOLTS • NUTS

RIVETS and SCREWS...

Quality • Dependability
Prompt Delivery
For further information, write
210 Canal Street

CLARK BROS BOLT CO.
MILLDALE, CONN.

For Greater Security...
Fasten Fast with Clark Fasteners

If you write maker identify as IEN - 11385

LAWLOR MOP WRINGERS

FOR EASIER MOPPING GET A LAWLOR NO. 2

EASIEST turning wringer made: there are bearings at ends of rollers.

EASY to bring rolls together: foot lever is perfectly balanced.

Copied but never duplicated!

EASY to move wringer; self-adjusting front casters raise metal feet from floor when you're ready to go.

The LAWLOR No. 2 accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

LAWLOR No. 6 TWIN is like the No. 2 Wringer in general construction, but accommodates two pails.

Write for Catalog of Mopping Tools, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size floor

S. C. LAWLOR CO.
120 North Aberdeen Street • Chicago 7, Illinois

If you write maker identify as IEN - 11386

SHENANGO Centrifugal CASTINGS ... KEY TO SAVINGS

Centrifugally cast Meehanite Metal printing press rolls with circumferential and longitudinal scoring. Because these close grain Shenango castings are better able to resist distortion and deflection, they are ideal for continued, trouble-free service where conditions are rugged.

Why Shenango Meehanite castings do a better job, longer

TAKE these printing press rolls, for example. They're not only made of uniform, precisely controlled Meehanite Metal, but they're produced by Shenango's centrifugal casting process.

This combination means stronger, *pressure-dense* metal, with more evenly dispersed graphite flakes, as well as freedom from porosity, sand inclusions, blowholes and other strength destroying defects.

If you need symmetrical or annular parts for tough service, large parts or small, finished or semi-machined, you will be time and money ahead with Shenango. You are welcome to the facts. Write to:

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO
COPPER, TIN, LEAD, ZINC BRONZES • MONEL METAL
ALUMINUM AND MANGANESE BRONZES • NI-RESIST • MEEHANITE METAL

If you write maker identify as IEN - 11387

MORE WORK using FEWER WORKERS with

DUO-FAST One-Hand AUTOMATIC TACKERS

You can do much more tacking in less time with these efficient Duo-Fast Tackers . . . You'll like the wide range of AIR TACKERS, GUN TACKERS and HAMMER TACKERS available. You get exactly the model you need . . . You'll like our money-saving FREE MAINTENANCE SERVICE. For the complete story, mail this coupon.

FASTENER CORP. 860 Fletcher St., Chicago 14, Ill.

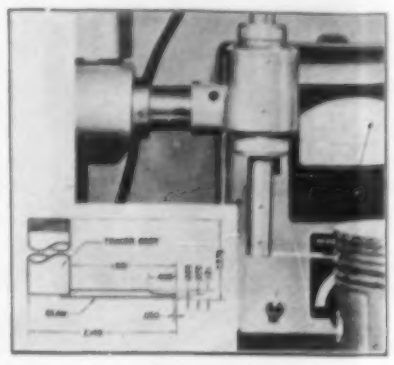
FREE TELL US MORE about Duo-Fast Tackers for —

Our Business is
Company Name
Address
City State

If you write maker identify as IEN - 11388

Gage - Electronic instrument reads surface roughness in micro inches

Source: MICROMETRICAL MFG. COMPANY
345 S. Main St., Dept. IEN, Ann Arbor, Mich.



In a narrow slot

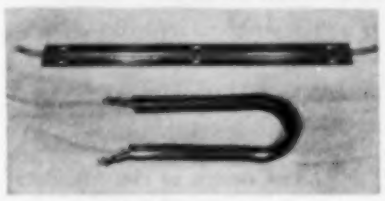
A new tracer, with a long beam to measure roughness in small holes, narrow grooves and slots, small parts or small areas on large parts where dimensions are less than ¼ in., has been added to the company's Profilometer surface roughness instrument. The new tracer is known as Type GK. It applies in hole measuring $\frac{5}{16}$ in. or larger and in slots measuring $\frac{5}{32}$ in. in width to a depth of ¼ inch. It can be applied in ⅛-in. holes and slots to a depth of 1⅜ in. and on gear teeth as small as 18 pitch.

The tracer point is at the end of a long narrow beam with support and mechanical movement supplied by the Linear Pilotor, previously described IEN-7201-54. Internal and external tapered surfaces, flats and outside diameters, where the work can be mounted with its surface approximately horizontal, can also be checked.

If you write maker identify as IEN - 11389

Heating - Electric element to apply on a flat or curved surface

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



For pipes, platens, tanks

A Calrod element is brazed into a formed steel vane, measuring $\frac{1}{16}$ in. in thickness, in construction of this new vane type electric heating element. The unit is available in lengths ranging from 20 to 100 in. with rating at 500 to 2,500 watt on 110 or 220 volt input. The vane measures 1¾ in. in width and provides radiating surface as well as structural strength to resist mechanical shock and vibration. The Calrod element measures 0.315 in. in diameter. The assembly can be formed to a minimum 1½-in. inside radius. The vane can be cupped to fit lengthwise on a circular surface when required.

If you write maker identify as IEN - 11390

Melt trade names a pelleted chemical to melt ice and snow. The recently improved material includes pellets ranging in size from $\frac{3}{32}$ to ¼ inch. The smaller ones spread and thaw the ice and snow initially. The larger ones maintain the surface against subsequent freezing. Packaging is in 25 to 300-lb. containers. Ton lots are packed in 100-lb. moisture proof bags. Chem Industrial Co., 3784 Ridge Road, Dept. IEN, Brooklyn 9, Ohio, is the manufacturer.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11391

QUALITY — EQUAL TO ANY CONSTRUCTION

BROOKVILLE BUILDINGS cost 30% less

• ALL STEEL
• FULLY INSULATED

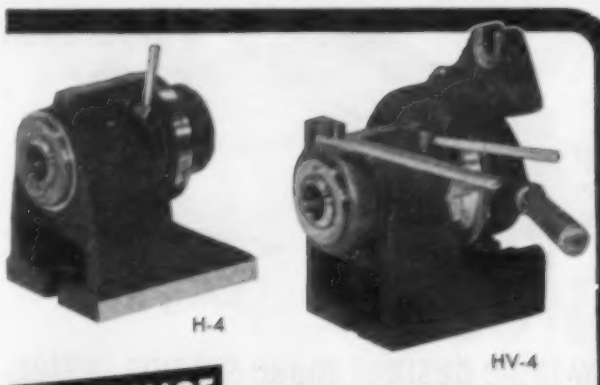
Here at last is a pre-engineered building fully equivalent to the finest brick and masonry construction—*yet selling for 30 percent less.* These fully insulated, all-steel structures are erected with pre-fab speed, but are individually tailored to your requirements.

Single and multiple structures are available in an amazing choice of spans, lengths, heights, door and window arrangements, and ready as you desire for architectural frontal and interior treatment.

Write for Folder A for full details.

BROOKVILLE MANUFACTURING COMPANY
P.O. BOX 67 BROOKVILLE, PA.

If you write maker identify as IEN - 11392



H-4 HV-4

HARDINGE ELMIRA, N.Y.

INDEX FIXTURES

The way to increased production is to hold work accurately and provide for rapid indexing. HARDINGE Collet Index Fixtures—H-4 for Tool Room and Inspection Departments; HV-4 for Production Departments—will help increase production on either new or old machines. Planned interchangeability for a variety of applications. Buy these standard fixtures instead of making expensive special fixtures.

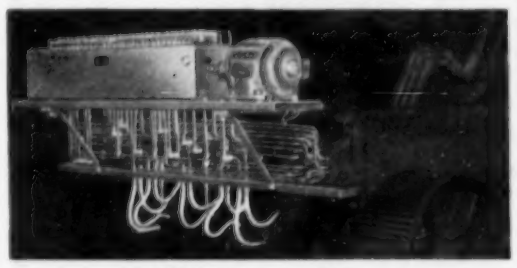
HARDINGE COLLETS
For All Lathes and Automatics
Backed by 60 Years of Manufacturing Experience

HARDINGE BROTHERS, INC., ELMIRA, N. Y.

If you write maker identify as IEN - 11393

MANZEL

FORCE FEED LUBRICATORS COST LESS — *Than doing without them!*



Pressure Application — Exact Amounts Accurately Timed

Manzel Force Feed Lubricators quickly save their cost by preventing breakdowns due to faulty or forgotten lubrication — by reducing the quantity of lubricants used—and by eliminating the labor of hand oiling. They keep vital parts properly lubricated for uninterrupted production efficiency round the clock.

You can have Manzel Force Feed Lubricators installed on present equipment or engineered into new machinery. Write for information.

Manzel

DIVISION OF FRONTIER INDUSTRIES, Inc.
242 BABCOCK STREET, BUFFALO 10, N. Y.

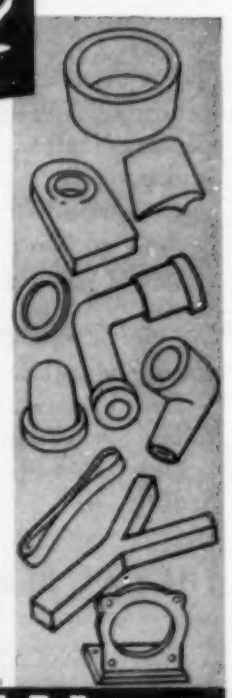
If you write maker identify as IEN - 11394

Silicone RUBBER PARTS may be your most efficient, most economical way to:

★ REDUCE FABRICATING COSTS
★ MEET "TOUGH" SPECIFICATIONS
★ IMPROVE PRODUCT QUALITY

Get this free ILLUSTRATED INFORMATION

16-page booklet with data insert on Silicone Rubber, tells how this amazing material solves parts problems for manufacturers of many types of products. . . . Contains complete details on Colonial's fast, efficient rubber compounding and molding. Write to:



COLONIAL RUBBER COMPANY
Ravenna, Ohio

If you write maker identify as IEN-11395

For maximum "see-ability"... better work...increased production

LUSTRA JADE-LITE

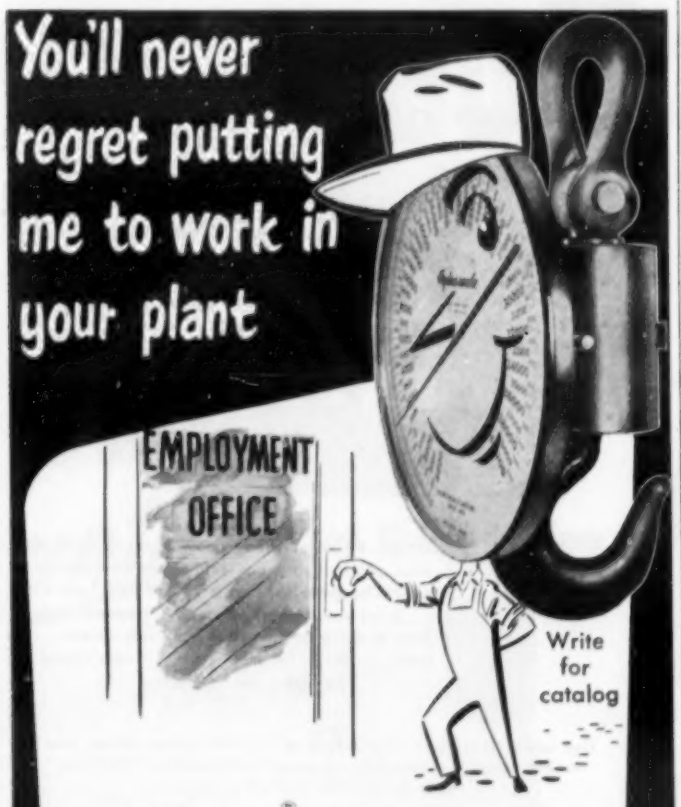
LUSTRA JADE-LITE gives a special quality of light that steps up "see-ability". In addition, its unique tone reduces glare, helps eliminate eye-strain, produce better work and boost production. Jade-Lite is absolutely tops for use in critical work areas. Write for the whole story on Jade-Lite Fluorescent Tubes—it can bring new efficiency and economy. **Lustra Corporation, Dept. IEN-10, 36 Washington St., Brooklyn 1, N. Y.**

Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN-11396

You'll never regret putting me to work in your plant



I'm Hydroscale—I'll go to work at a price you can well afford—Guard you against losses—Watch weights on the dock, in production and processing—Help you make money as well as save it! My buddies are on the job from coast to coast eliminating the expense and inconvenience of ordinary weighing stations, making weighing practical and convenient—a part of your handling operation.

HYDROSCALE

Over 60 standard models
500 to 200,000 lbs.
Pound-Kilogram models,
Batching models, etc.

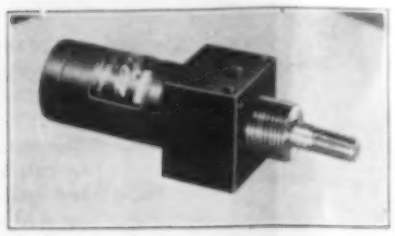
HYDROWAY SCALES, INC.
20624 WEST 8 MILE ROAD · P.O. Box 4754 · DETROIT 19, MICH.

TRADE MARK REGISTERED U. S. PAT. OFF.

If you write maker identify as IEN-11398

Cylinder - Miniature assembly for clamping, ejecting, pilot service

Source: CARTER CONTROLS INC.
2800 Bernice Road, Dept. IEN, Lansing, Ill.



Details on request

Steel, bronze bearings and oil resistant synthetic piston packing are employed in the construction of this new air or hydraulic cylinder. Overall dimensions of the unit shown in the illustration are 5 in. in length, 1½ in. in height and 1½ in. in width. Stroke is 2 inches. The standard design has a universal mount to permit application of a threaded nose, foot, front or rear flange. Pivot, trunnion, clevis mounting can be specified.

Six styles include single and double acting assemblies for push or pull action in plain or solenoid actuated assemblies and in 1 or 2 in. strokes. The single acting units are provided with spring return.

If you write maker identify as IEN-11399

Tube - Flexible vinyl plastic in 270 ft. lengths, 2 to 30 in. diameter

Source: TEXAS PLASTIC DEVELOPMENT CORP.
3638 University Blvd., Dept. IEN, Houston 5, Texas

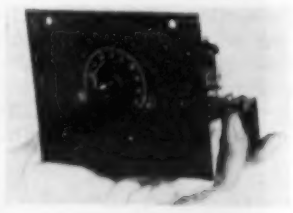
Abrasion resistant, will not rot, corrode

Tex-Test trade names a new plastic tube with wall thickness ranging from 4 to 50 mils. The tube was originally designed for irrigation uses. It is now available for plant application in drainage, in discharge from chemical plants, in transporting liquid fertilizers, oils, gases, acids, alkalis. The company is prepared to supply the required diameters with the necessary fittings and instructions to complete a specified installation.

If you write maker identify as IEN-11400

Timing - Electronic unit encloses circuit for preset interval

Source: G. C. WILSON & COMPANY
1950 Eighth Ave., Dept. IEN, Huntington, W. Va.



For machine control

Type 12MC is a new electronic interval timer in assembly with a single-pole double-throw relay rating 10 amperes. The relay contacts stand normally open. The timer closes them, following actuation by a foot switch, push button, pressure switch or other momentary or sustained closing device. It holds the circuit closed for a predetermined interval as set on a dial on the housing face. Interval range is minimum at 0.05 sec. and maximum at 7 seconds. The assembly can be supplied for panel mounting as illustrated or in a housing that measures 3 by 4 by 5 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11401

illinois

FLOAT AND THERMOSTATIC TRAPS
SERIES G

They're different!

- **in construction**
- **in performance**

Recommended Applications... **Ventilating Units, Unit Heaters, Pre-Heaters, Re-Heaters, Process Heaters, Hot Water Generators, Drips of Mains and Risers.**

They operate under vacuum with the same high efficiency as under pressure. The snap-action condensate control valve provides complete and instantaneous drainage. A separate thermostatically controlled valve in cover vents air in large volume, yet prevents loss of valuable steam. Illinois traps function perfectly at all load conditions with lower return line temperatures than ordinary type traps. Straight through connections. Trap easily opened. Not damaged by freezing. Sizes from ¾ inch to 2 inches.

Write for Bulletin

illinois ILLINOIS ENGINEERING COMPANY
2035 SOUTH RACINE AVENUE, CHICAGO 8
DIVISION OF AMERICAN AIR FILTER COMPANY, INC.

If you write maker identify as IEN-11402

space saving HV FILTER has longer life greater efficiency

AAF's new High Velocity filter handles the same air volume in ⅓ the space of standard unit filters. It operates effectively at velocities from 300 to 500 fpm and maintains uniform efficiency over this wide range of velocities. It's the exclusive *pyramid pocket* filtering media that makes the difference!

The H-V's low resistance, large dust capacity and longer life make it a superior unit for limited space conditions.

Available in all standard sizes and 1", 2" and 4" depths. Engineering Bulletin #203 gives complete information and technical data. Write for it today.

AAF American Air Filter
COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN-11403

FABRICS & TAPES For ALL INDUSTRY

FLIGHTEX FABRIC FABRICS

- GLASS
- COTTON
- VINYON
- DYNEL
- ORLON

If you use special industrial fabrics and mechanical tapes, you'll find Flightex a dependable source of supply. Our staff of engineers is at your service to help solve your fabric and tape problems.

Write for Complete Information

FLIGHTEX FABRICS, Inc.
91 Worth Street New York 13, N. Y.

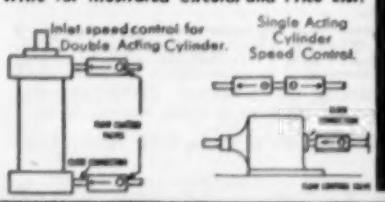
If you write maker identify as IEN-11404

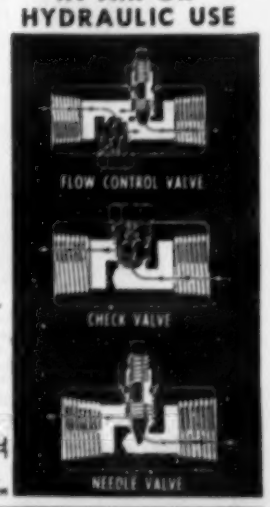
Get Easier, More Accurate Cylinder Speed Control with *Pneu-Trol* VALVES IN AIR OR HYDRAULIC USE

2000 and 5000 (steel) P.S.I.

Pneu-Trol Valves combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Retro ball floats in most sensitive position to seat, requiring only a slight differential pressure to fully open or close it. Check Valve and Needle Valve incorporate single function features of Flow Control Valve. All valves available in 3 numbers pipe sizes — 1/8" to ¾". Valve bodies are made from brass, aluminum, steel or stainless steel. Attractive Prices — Immediate Delivery.

Write for Illustrated Circular and Price List.

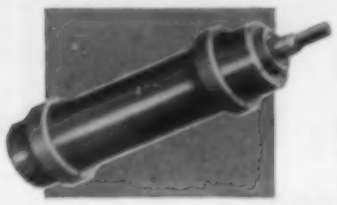




Pneu-Trol Devices, Inc.
1438 N. Keating Ave., Chicago 51, Ill.

If you write maker identify as IEN-11405

FOR LOW MAINTENANCE
Westinghouse Type "A" Pneumatic Cylinders



● Maintenance is no problem with these streamlined Westinghouse Type "A" Pneumatic Cylinders. They have only a few wearing parts, and *all* parts are strong and durable to assure long life in hard service. A wrench grip on the push rod makes servicing easy and adds to the life of the rod.

Westinghouse Cylinders are built with or without cushioning. They are light, compact and fast acting.

Standard construction is steel but for corrosive uses, brass bodies and stainless steel push rods can be supplied.

Diameters run from 1½" to 10" with strokes from 1" to 42"—and longer if push rod is in tension. Units can be foot-mounted, flange-mounted, or pivot-mounted.

Write for booklet 9308-2

Westinghouse Air Brake COMPANY

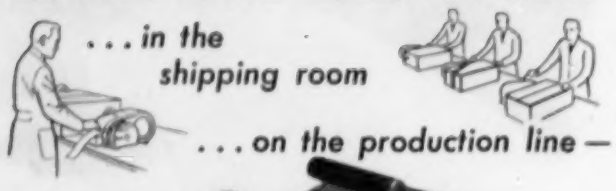
INDUSTRIAL PRODUCTS DIVISION — WILMERDING, PENNSYLVANIA

Pneumatic cylinders, valves, engineered pneumatic systems and air control devices of all kinds.

Factory Branch: Emeryville, Calif. Distributors throughout the United States ... See your Classified Directory.
Distributed in Canada by: Canadian Westinghouse Co. Ltd., Hamilton, Ont.

If you write maker identify as IEN-11406

For fast, secure CARTON SEALING



Model 52

NATIONAL TAY-PER®

- **SAVES TIME**—a pull of the lever automatically measures, moistens, cuts and delivers tape lengths up to 36", in any width up to 4". Automatic moistening control* reduces rub-down time.
- **SAVES TAPE**—for uniform run of boxes, two strip sizes can be obtained alternately. For variety packaging, any required length can be selected instantly.
- **AVOIDS DAMAGE CLAIMS**—positive moistening control "welds" tape to cartons for double protection.
- **DEPENDABLE** because it's a National, quality-built and engineered for years of trouble-free service.

*Endorsed by the Association of American Railroads and the Gummed Industries Association, Inc.

itstix® PRINTED TAPE

Used with the National Tay-Per No. 52, Itstix Printed Tape "padlocks" your package or carton, provides insurance against pilferage, aids in tracing lost shipments, and constantly advertises your product. Let us create a distinctive, eye-dentifying tape design for you. No charge.

FREE 10-day Trial OFFER

Put this automatic No. 52 National Tay-Per to work for you in your own shipping department, for 10 days, without cost or obligation. See how it streamlines your packaging operations and does a better sealing job. Mail coupon for free trial.

NASHUA — **NASHUA PACKAGE SEALING**
DIVISION OF NASHUA CORPORATION
Dept. P-4, 44 Franklin Street, Nashua, N. H.

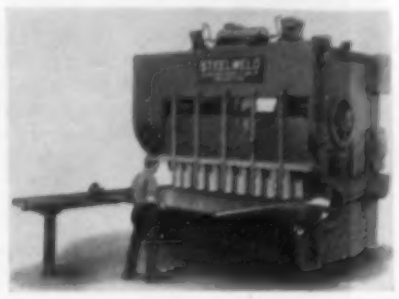
Please send me a National Tay-Per for a FREE 10-day trial.

Name _____ Title _____
Firm _____
Street _____
City _____ State _____

If you write maker identify as IEN-11408

Shearing - Pivoted blade machine rates 8 ft. of 1½ in. steel plate

Source: CLEVELAND CRANE & ENGINEERING CO.
1137 E. 283rd St., Dept. IEN, Wickliffe, Ohio



Central lubricating

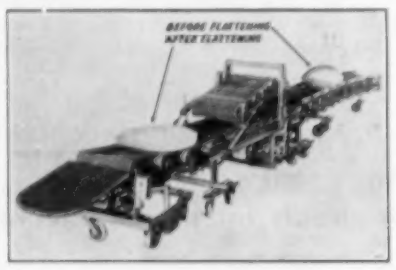
The operator of this new Steelweld machine adjusts knife clearance, to suit the thickness of the metal he is about to cut, by turning a hand crank and observing a dial indicator. When the indicator hand is on the figure representing the thickness he depresses a movable electric foot switch to actuate the pneumatic clutch and brake unit. The upper blade then comes down in its circular pivoted path to make a clean cut, free from burrs. The pivoted construction characterizes the Steelweld line of shearing machines. It eliminates the use of guides and slides for the moving head.

Construction includes welding for the end housings, crown and bed to form a solid single piece. Deep throat forgings add to the frame strength. Blade counter balances cushion the cutting action to minimize the noise that usually occurs when the knives contact the work. Operating speed is at 22 strokes per minute. Adjustments are provided for slitting and notching.

If you write maker identify as IEN-11409

Conveying - Belt type machine for bags includes flattening section

Source: FLEXOVEYOR MFG. COMPANY
1220 S. Acoma St., Dept. IEN, Denver 10, Colo.



Any length to order

Illustrated is new design of the multiple belt conveyor, previously described IEN-6688-51, in which a flattening section is included to make bags handled over the conveyor all uniform in height. The unit shown here measures 26 ft. from end to end by 2 ft. in width. It includes a 15-ft. flexible section coupled to an 11-ft. rigid section. Drive is by a 1½-hp. geared head motor which also drives the flattener unit. Intended application is in unloading box cars and motor vehicle trucks. Operation is at 120 fpm. with capacity to deliver 1,000 bags per hour. The discharge end can be raised or lowered by means of a built-in hydraulic jack.

If you write maker identify as IEN-11410

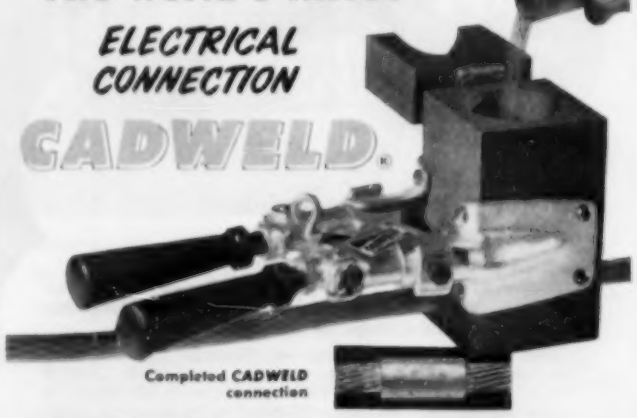
Stackpole EE designates a new "preferred type" powdered iron core now in production by Stackpole Carbon Co., 1942 Tannery St., Dept. IEN, St. Marys, Pa. Available types include round cores with threaded brass inserts, threaded cores with hexagon holes or screw drive slots. Each design has been standardized and stocked in quantity for fast delivery.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11411

When Ignited-
THESE TWO COMBINE TO MAKE

The world's finest
ELECTRICAL CONNECTION
CADWELD®



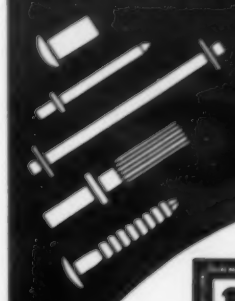
Completed CADWELD connection

for the best in ELECTRICAL CONNECTIONS

The Current Trend IS **CADWELD**
ERICO PRODUCTS, INC.
5070 S. 61st PLACE — CLEVELAND 5, OHIO

If you write maker identify as IEN-11412

CORROSION RESISTANT



RIVETS • NAILS
SCREWS
FASTENERS

in

Hassall

STAINLESS STEEL
MONEL • NICHROME
COPPER ALLOYS
SILICON BRONZE
ALUMINUM
NICKEL SILVER

Hassall fasteners are cold headed for maximum strength, lowest cost.

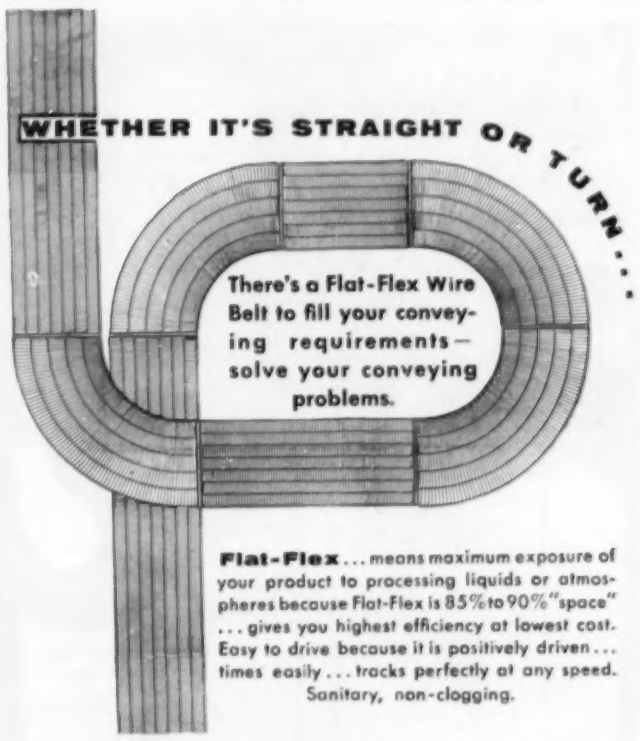
Special fasteners of all types, in any metal are a HASSALL specialty. Small as well as large quantities economically produced. The use of special cold forged parts may cut your parts cost and reduce your assembly cost.

We have a variety of raw material in stock. Our delivery is fast. If you have a fastening problem, tell us about it . . . we may have the answer.

JOHN HASSALL, INC. P. O. Box 2169 Westbury, Long Island, New York

If you write maker identify as IEN-11413

WHETHER IT'S STRAIGHT OR TURN . . .



Flat-Flex . . . means maximum exposure of your product to processing liquids or atmospheres because Flat-Flex is 85% to 90% "space" . . . gives you highest efficiency at lowest cost. Easy to drive because it is positively driven . . . times easily . . . tracks perfectly at any speed. Sanitary, non-clogging.

Our newly developed Flex-i-Turn, with a 16" inside radius, now makes possible a complete, compact installation of Flat-Flex Wire Belt on any production line.

Available in widths and meshes to fit your requirements. Write:

WIRE BELT COMPANY OF AMERICA
DEPARTMENT 40
750 MAIN STREET, CAMBRIDGE, MASSACHUSETTS

If you write maker identify as IEN-11414

MELRATH GASKETS

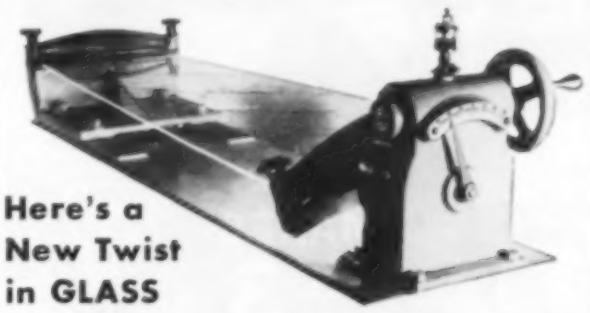
GRAPHITED COMPRESSED ASBESTOS SHEET PACKING and GASKETS

MELRATH No. 125 . . . a high quality long fiber material resistant to acids, oils, steam, chemicals, etc. Proven for over 30 years.

There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

If you write maker identify as IEN-11415



Here's a New Twist in GLASS

Here, a 42" length of ¼" L·O·F *TUF-FLEX** tempered plate glass 12" wide is being twisted through a 20° angle! It's three to five times *tougher* than regular plate glass of the same thickness.

Other important comparisons:

TUF-FLEX is four times more resistant to *thermal shock.*

TUF-FLEX is three to five times more resistant to *impact* shock from blunt objects.

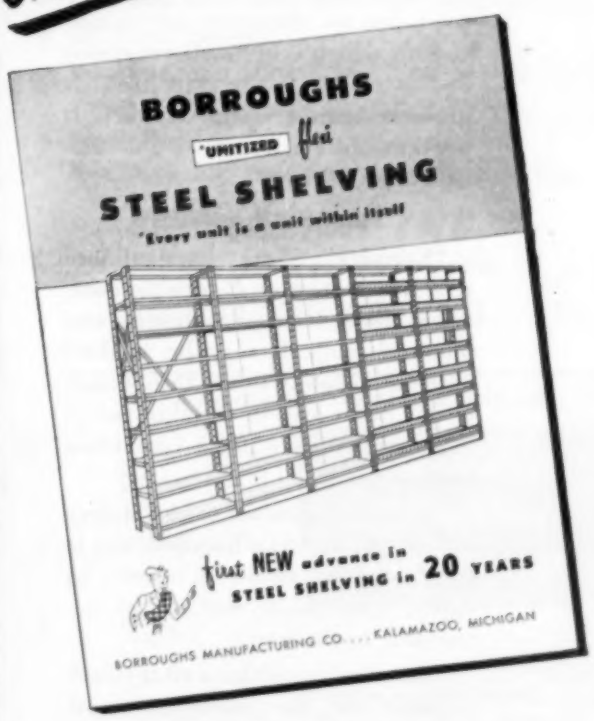
Find out how *TUF-FLEX* can improve *your* products (or production process)

Write for your *FREE* copy of TF-8. Also ask for SPD-54—*L·O·F Glass for Product and Engineering Design.* Write Dept. 92104, Libbey·Owens·Ford Glass Company, 608 Madison Ave., Toledo 3, Ohio. *®

LIBBEY·OWENS·FORD
. . a great name in GLASS

If you write maker identify as IEN-11416

Don't Buy STEEL SHELVING *until* you get this catalog



it's just off the press!

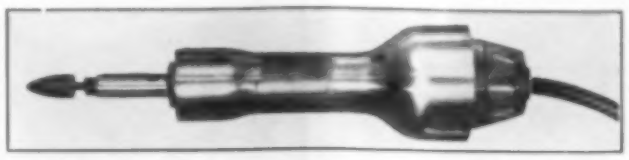
Read about the most original, practical and economical steel shelving on the market.. the last word in new features, simplicity and value. We could tell you more, but why not get the complete story from our new catalog? BORROUGHS UNITIZED FLEXI STEEL SHELVING has been on the market but a few months, and already it's an outstanding success. So don't buy any steel shelving until you read about Borroughs—the most advanced steel shelving in 20 years!

BORROUGHS MANUFACTURING COMPANY
A Subsidiary of American Metal Products Company of Detroit
3002 NORTH BURDICK amp KALAMAZOO, MICHIGAN

If you write maker identify as IEN-11418

Grinding - Air turbine tool, four sizes, 45,000 to 100,000 rpm.

Source: METAL REMOVAL CO.
1546 N. Orleans, Dept. IEN, Chicago 10, Ill.



For die finishing and touch-up

The turbine rotor in this new high speed grinder rides on ball bearings. It carries a spindle that takes a collet to hold a mounted wheel. Four tools sizes in the line operate at 45,000 to 100,000 rpm. and have collet capacities from ⅛ to ⅜ in. for maximum wheel diameters from ⅜ to 1 inch. Air consumption is from 5 to 9 cfm. based on line pressure of 90 to 100 pounds. The smallest tool weighs 9 oz. and lists at $48. The largest weighs 30 oz. and lists at $78.

If you write maker identify as IEN-11419

Hose Fitting - Worm drive clamp, stainless steel, six sizes to 4½ in.

Source: WITTEK MFG. COMPANY
4305 W. 24th Place, Dept. IEN, Chicago 23, Ill.

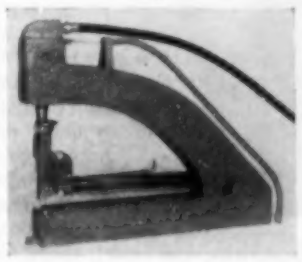
Bulletin 654

The band and worm housing in this new hose clamp are made of stainless steel. The hardened worm screw is cadmium plated and slotted to take any size of screw driver. Six sizes provide for minimum diameter from ⅝ to 3¾ in. and maximum diameter from 1¼ to 4½ inches. List price is 31 to 38 cents. Packaging is ten to a carton. Application can be made on a hose in place.

If you write maker identify as IEN-11420

Stapling - Pneumatic tool mounts on bench, singly or in multiple

Source: BOSTITCH
1020 Mechanic St., Dept. IEN, Westerly, R. I.



Weighs 15 pounds

Connection is made to a shop air source by hose connection at the top of this new air operated stapler, Model KAD. The air operates a pneumatic cylinder controlled by a valve connecting by flexible pull-line to a foot pedal. Heads can be changed to handle a range of staple sizes. Two or more machines can be set up, on minimum 2-in. center distance, for simultaneous operation. The stapler is particularly suited to fasten a quantity of related papers, to seal shipping envelopes, to do light assembly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11421

This is tomorrow's Screening TODAY

LIFETIME FIBERGLAS SCREENING

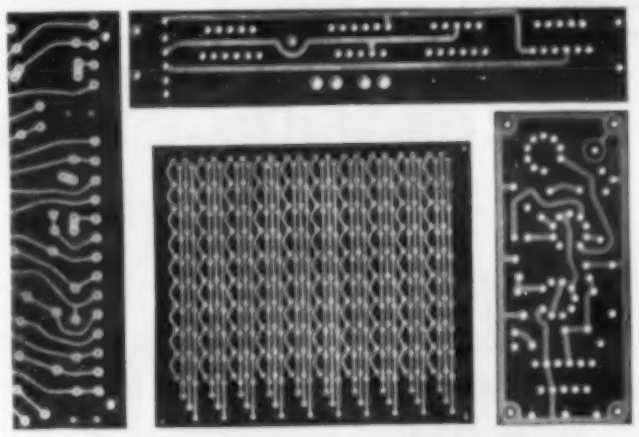
- Will not Corrode
- Will not Rust
- Will not Stain
- Never Rots
- Never Burns
- Never Sags
- Never Shrinks
- Never Stretches
- Never Bulges
- Easy to Install
- Easy to Repair

This is the screening everyone is talking about . . . this is the screening that's lighter, tougher, longer lasting than any other screening.

Send today for samples and catalog.

LOCKSET SCREENING CO., INC.
CANTON, MASS.
Our National Sales Representatives:
John H. Graham & Co., 105 Duane St., New York 8, N.Y.

If you write maker identify as IEN-11422



Easy, accurate way to make etched circuits, name plates

Now you can make time-saving, cost-saving etched printed circuits *photographically accurate*—with Kodak Photo Resist.

Kodak Photo Resist lets you pre-coat and store plates in ready-to-use form for months without losing sensitivity. Nor will they be affected by heat or humidity.

You can etch metal name plates, too, with Kodak Photo Resist. Because it gives traditionally sharp *photographic* definition, you'll find it the ideal material for this purpose.

WRITE FOR: technical data booklet on how to make etched circuits and name plates with Kodak Photo Resist.

EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN-11423

USE PROPANE? USE ACETYLENE?

USE THIS TORCH-O-MATIC

USE THIS TORCH-O-MATIC

WHICHEVER TORCH-O-MATIC YOU USE—EXCLUSIVE TRIGGER-CONTROL SAVES YOU TIME, SAVES YOU FUEL

With either the Propane or Acetylene Torch-o-matic, you get the *exclusive* trigger-control feature that *eliminates* lighting-up, adjusting, and open-flame hazards. Just pull the trigger and it lights; release the trigger, it's out! With the Propane Torch, pulling the trigger completely back lengthens the flame from a pin-point to a full 6 inches. This *automatic* on-off flame control saves you time when you're using Torch-o-matic; saves you gas when you're not! Write for complete details.

VELOCITY POWER TOOL COMPANY
201 North Braddock Avenue, Pittsburgh 8, Pa.

If you write maker identify as IEN-11424

KELLER AIR MOTORS

- Compact design with high power-to-weight ratio. Enclosed construction.
- Efficient with either high or low air pressure.
- Positive-acting, piston-type, constant torque motors with infinitely variable speed in either direction.
- ½ To 2¾ hp in a wide range of speeds and torques.

Send for illustrated descriptive Bulletin No. 70

Keller Tool Company
1329 Fulton St.
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN-11425

RECEIVING...PRODUCTION... WAREHOUSE...SHIPPING... MAINTENANCE

every department can use the CM CYCLONE

HIGH-SPEED—HEAVY DUTY—ALUMINUM ALLOY

CHAIN HOIST

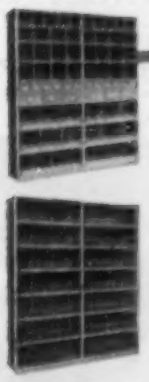
CAPACITIES: ¼ TO 10 TON

● Help your men get lifting jobs done quicker, safer, with less physical effort. Increase labor dollar return. PORTABLE—Carry with one hand. EASY OPERATION—Less hand chain pull. LOW HEADROOM—Highest possible lift. HERC-ALLOY flexible welded load chain. Lifetime lubrication. *More CYCLONE Hoists are in use today than any other hoist in their class.*

CYCLONE CATALOG NO. 145
Illustrates, describes and prices all models. Sent on request or ask your CM Distributor.

CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND

If you write maker identify as IEN-11426



In shelving it's the erected cost that counts!

De Luxe steel shelving costs less

- Easy to Install
- 100% Adjustable
- Fewer Parts
- Easier to Adjust
- 80% Less Bolts
- Precision Made

A De Luxe factory representative is near you, ready to give you complete engineering, planning and layout service, without obligation. Write today for free catalog.

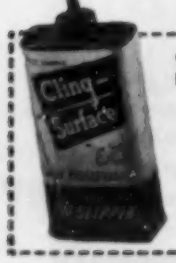
DE LUXE METAL FURNITURE CO.
303 Struthers Street, Warren, Pa.

For over 25 Years Manufacturers of: Storage Shelving · Library Shelving · Storage Cabinets · Shop Equipment

If you write maker identify as IEN-11427

FREE SAMPLE

- Makes and keeps belts soft and pliable
- *Pliable* belt "clings" to "surface" of pulley
- Dissolves hard "glaze" that makes belts slip
- *Only* belt preservative that has met and passed U. S. Government Tests and Requirements
- Sold with money-back guarantee since 1896



CLING-SURFACE CO., 1044 Niagara St., Buffalo, N. Y.
In Canada: Write CLING-SURFACE CO., Toronto 2, Ont.

Please send me FREE sample can of Cling-Surface "50" Belt Preservative

Name .....
Title .....
Company .....
City ..... State .....

If you write maker identify as IEN-11428

Machining - Flexible tapered sleeve to drive drills, end mills, reamers

Source: PILOT TOOLS INC.
225 Lafayette St., Dept. IEN, New York 12, N. Y.

Patented design

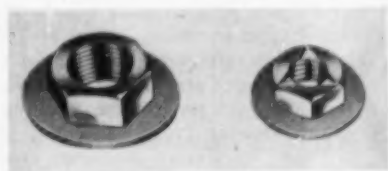
Spring steel is wound and finished inside and outside in manufacture of this new flexible sleeve. It adapts itself to surface irregularities around a tool and inside a machine spindle when it is fully engaged. It can be quickly disengaged by twisting. It will not score or mar a tool shank.

Sizes range from No. 1 to No. 5 with Morse tapers from 1 to 2 and 5 to 6. It also is available in a universal Type A for tools without tangs or with tangs that have been broken and in a Type B for those with broken tangs only.

If you write maker identify as IEN-11429

Fastening - Flange type nut made in plain or self-locking design

Source: GRIP NUT CO.
310 S. Michigan Ave., Dept. IEN, Chicago 4, Ill.

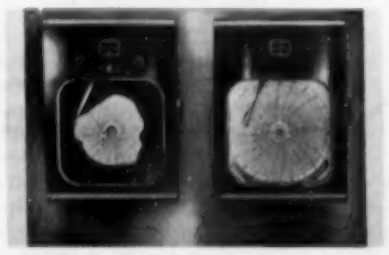


Details on request

Plain design, to the left in the illustration, and self-locking design, in which the threads are deformed, are both available in a new line of integral flange nuts ranging in size from ¼ to ⅝ inch. National Fine or National Coarse threads can be specified. The nut eliminates the need for a separate washer. It is particularly suited for hold down application.

If you write maker identify as IEN-11430

New line of control instruments has been developed by Bristol Company, 107 Bristol Road, Dept. IEN, Waterbury 20, Conn., for use with environment test cabinets. The instruments will initiate and maintain a program of varying climatic conditions within the cabinet to simulate desired temperature, humidity, altitude. They can be employed to bring temperature, pressure or vacuum up to a desired value and hold it there for a predetermined length of time. A plastic or aluminum cam serves as a template for the program side of the equipment. The cam can be changed quickly for another one cut to control a different program.



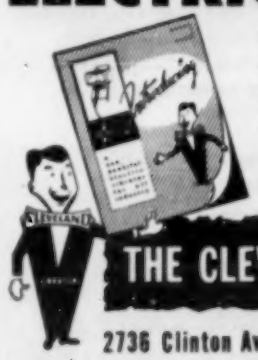
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11431

NEW COMPACT POWERFUL

Quiet!

ELECTRIC VIBRATOR



To speed the flow of stubborn material from hoppers, bins and chutes of all sizes and shapes.

Obtainable in all voltage, phase and cycle requirements.

Write today for complete literature.

THE CLEVELAND VIBRATOR CO.
2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as IEN-11432

If your product calls for ball bearings, roller bearings or hard-to-make precision parts just remember Aetna can supply them all . . . in the volume you need . . . to your most exacting metallurgical and precision specifications. And when you deal with Aetna you draw on a 38-year background of engineering knowledge and production experience hard to match anywhere. A letter or phone call will place our engineers at your disposal.

AETNA BALL AND ROLLER BEARING COMPANY
Division of Parkersburg-Aetna Corporation
4600 Schubert Avenue
Chicago 39, Illinois

Aetna 38 YEARS OF Quality ANTI-FRICTION PRODUCTS

Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Hardened and Ground Washers • Sleeves • Bushings • Miscellaneous Precision Parts

If you write maker identify as IEN-11433

Reduce Lost Man Hours

"Kerodex" Gives New and Improved Barrier Protection Against Contact Dermatitis

"Kerodex" is a new and improved barrier cream which offers maximum protection against hundreds of primary irritants and sensitizing agents encountered in industry. It provides an effective protective coating which is invisible yet strong and as elastic as the skin itself. It protects against initial contact. It prevents the recurrence of a dermatitis after recovery.

Special Advantages

"Kerodex" offers practical and effective protection *before* the damage is done. It is nonirritating and nonsensitizing. It may be applied with equal safety to the face, hands or any other area of the skin, keeping pores and follicles free from foreign matter.

"Kerodex" does not smear. It does not affect materials handled, nor is it affected by them. It is easy to apply, economical and highly acceptable to the user.

"Kerodex" provides a vital safety measure for the maintenance of high production levels.

Maximum Protection

"Kerodex"® is supplied in two types, and a series of creams are available to protect against: *water-soluble* irritants such as acids, alkalis, soaps, detergents, and *water-insoluble* irritants such as paints, enamels, cleaning fluids.

Write for Information

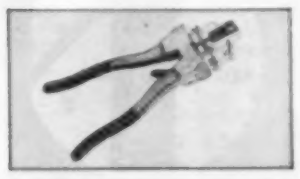
We'll be happy to send you complete descriptive literature, or to have our representative call at your convenience.

Ayerst Laboratories, 22 East 40th Street, New York 16, N. Y.

If you write maker identify as IEN-11435

UTICA® KOLDWELDING Tool KL-10 for Lapwelding of aluminum foil and sheet or strip up to .040 or over all of .080.

You never saw aluminum welded so quick and easy! Photo shows .004 aluminum foil shielding just as it comes out of the UTICA® Lapwelder.



UTICA® KOLDWELDING Tool KB-14 for buttwelding (above) makes perfect welds without heat, electricity or flux in just seconds. Operates with many non-ferrous metals.

To get more facts and data on this new type of welding send today for UTICA Koldwelding brochure.

NOW... KOLDWELD ALUMINUM

or other non-ferrous metal sheet

Easily, quickly

without heat · without solder without crimping

New UTICA® Lapweld Tool KL-10 Koldwelds by hand pressure alone, makes perfect welds and weighs less than 3 lbs. It's easily portable from job to job. Koldwelding employs no heat, electricity or flux. No special skill required. Yet it does equal or better work than conventional welding equipment which costs more and is non-portable.

One set of Utica precision dies will Koldweld all gauges of foil from an over all thickness of .002 to .026, and other interchangeable dies will Koldweld sheets to a maximum thickness of .040—total weld .080.

UTICA®

DROP FORGE & TOOL CORP.

KOLDWELD DEPT.

Utica 4, New York

If you write maker identify as IEN-11436

NEW SCHRAMM BACKHOE for the Pneumatractor

- *Complete hydraulic action*
- *Faster than cable operation*
- *Out-digs all tractor mounted Backhoes*
- *¼ Yard Shovel*
- *Backhoe and Shovel will load in 9 ft. dump truck*
- *Front End Loader with all accessories available for mounting with the Backhoe*

SCHRAMM, INC.

WEST CHESTER · PENNSYLVANIA

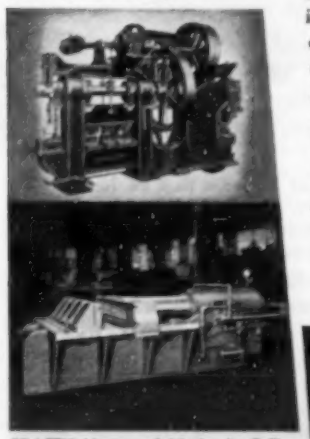
Schrammair your jobs

If you write maker identify as IEN-11437

BEATTY Co-Pun-Shear — one compact unit handles coping, punching and shearing.

we specialize in "cracking" tough nuts!

If you're confronted with a "tough nut" in the form of a metal fabricating production problem, call in a BEATTY engineer! Our men specialize in "cracking" the tough ones and our many years of experience and know-how in machine design and construction are always at your service. BEATTY machines are the answer to most production needs — they can be modified to fit, or can be custom-built to your specific requirements.



BEATTY Horizontal Hydraulic Bulldozer for heavy forming, flanging and bending.

BEATTY

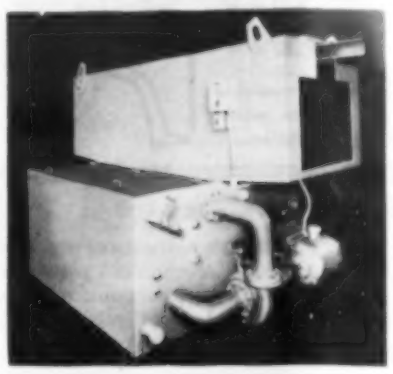
MACHINE & MFG. CO.

HAMMOND, IND.

If you write maker identify as IEN-11438

Cleaning - Washing machine, sectional design with monorail track

Source: DETREX CORPORATION
14329 Woodrow Wilson, Dept. IEN, Detroit 32, Mich.



Will apply phosphate coating

Series 30 is a new spray type washing machine made up of a standard tank, motor driven pump, monorail equipped work chamber and either steam or gas fired equipment to heat the washing solution. Each unit assembly will take work to 30 in. in width and provide a spray length of 4 to 10 ft. in 2-ft. steps. Multiple units can be secured together with gasketed connections to make a single water tight run. Seven heights in the work chamber range from 24 to 60 in. in 6 in. steps. Synthetic rubber curtains can be employed to vary the silhouette and to protect against over-spray and aeration.

The solution tank is made of 3/16-in. steel plate with a reinforced bottom. It will hold 600 to 1,000 gal. of cleaning solution. The motor driven pump circulates this solution through spray nozzles mounted on swing elbows that are adjustable for the most effective contour spraying of given work. The nozzle orifices are protected with screens. Access to the spray tank is through a gasket sealed door equipped with toggle clamps. The pump and its motor for each section are located away from aisle space. The pump will handle liquids to 180 deg. F. The tanks are fitted for quick clean-out.

If you write maker identify as IEN-11439

Crane - Truck mounted electric, telescopic boom, 3 ton load rating

Source: ELWELL-PARKER ELECTRIC CO.
4205 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio

Hand or power steer

Illustrated is new assembly of mobile motor driven crane rigged with a single load line, a lifting magnet and an electric line retriever. Drive and power for the magnet are supplied by a battery or by an engine driven electric generating unit that mounts in the place of the battery on the truck. Capacity of 3 ton is available when a sheave equipped load hook is employed in connection with a double load line.

A motor, separate from the driving unit, swivels the boom through a 300 deg. arc. The truck can be operated in 95-in. intersecting aisles. The telescopic boom can be set between 12½ and 19 ft. in length to suit given conditions.

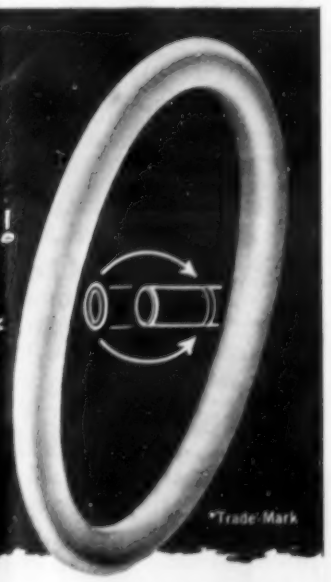
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11440

FREE

SAMPLES AND BOOKLET!

NEW SHAKEPROOF® Plasti-Rings* CUT SHAFT RETAINING COSTS



*Trade Mark

Slash costs of shaft retention and provide a more powerful, efficient retainer! Made of elastic vinyl that's oil, chemical and corrosion resistant, SHAKEPROOF Plasti-Rings roll into prepared groove on shaft . . . provide a shoulder that withstands up to 250 lbs. direct shear. 16 sizes: ⅛"—1" shaft size. Send for free Sample Kit and Booklet today!

SHAKEPROOF

"Fastening Headquarters"®

DIVISION OF ILLINOIS TOOL WORKS

St. Charles Road, Elgin, Illinois • Offices in principal cities

If you write maker identify as IEN-11441

ENGRAVE

NAME PLATES • PANELS • DIALS

in your own shop

Lowest set-up time for unskilled labor

CALIBRATIONS | PROFILES | CURVED SURFACES

10,000 IN USE Accepted by all leading manufacturers as the speediest, most versatile portable engraver. Only the NEW HERMES has these patented features:

- Adjustable for 15 ratios.
- Self-centering holding vise.
- Automatic depth regulator.
- Adjustable copy holders.

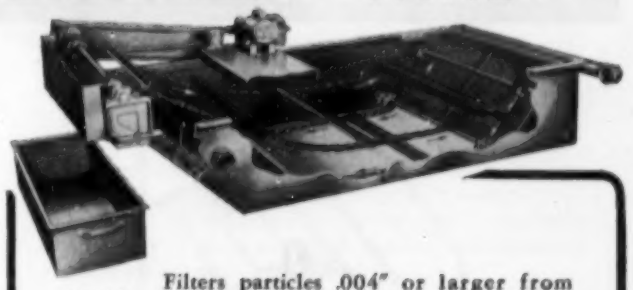
Send direct to us for booklet IM 23

NEW HERMES ENGRAVING MACHINE CORP.

13-19 University Place • New York 3, N. Y.

If you write maker identify as IEN-11442

New! *Filters Small Solids...* Delpark Settling and Filter SYSTEM



Filters particles .004" or larger from liquids of varying viscosity containing solids of different particle sizes and weights.

Power-driven expeller flights, solid and of special bristle brushes, sweep solids from the screen and settling area up a ramp at the opposite end. A special cleaning device removes the solids from the flights before their return to the filter. Screens easily removed for manual cleaning. A blank metal sheet replaces the screen during cleaning.

WRITE FOR NEW BULLETIN

INDUSTRIAL FILTRATION COMPANY

95 INDUSTRIAL AVE. LEBANON, INDIANA

If you write maker identify as IEN-11443

NEW BASEBOARD TEES with NIBCO QUALITY

Built-in, threaded ⅛" tapping for air vent saves time, saves bushings and makes a neater job.

NIBCO quality control with individual pressure tests for each fitting eliminates test leaks. Precision solder cups make sound joints and save solder.

Specify NIBCO Baseboard Tees at your jobber's. Write for samples you can test on your own installations.

NIBCO NORTHERN INDIANA BRASS CO.

1061 PLUM STREET, ELKHART, INDIANA

If you write maker identify as IEN - 11444

AGASTAT

Compact . . . Dust-Proof

TIME DELAY RELAYS

solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

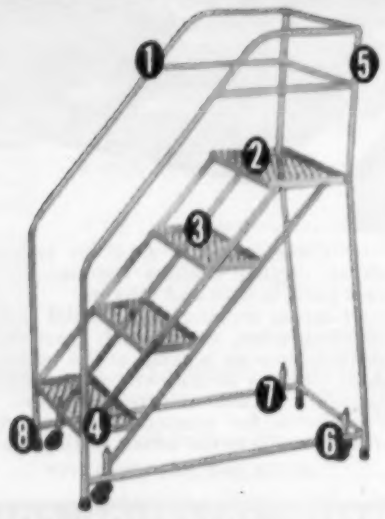
Write for Bulletin. Dept. A1-102

AGA

Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

If you write maker identify as IEN - 11445

ONLY BALLYMORE Safety Step LADDERS GIVE YOU ALL THESE ADVANTAGES!



1. **GUARD RAILS** . . . Users feel safe up on Ballymore Ladders, surrounded by sturdy guard rails which *really* support and protect.
2. **SAFETY TREAD** . . . Special non-skid design provides sure footing all the way.
3. **SELF-CLEANING** . . . Treads can't clog with dirt, grease, or liquids.
4. **LIFETIME WEAR** . . . All welded-steel heavy-duty construction; no rivets or bolts, nothing to loosen or wear out.
5. **STRENGTH OF STEEL** . . . Tubular cross-section assures high strength with light weight.
6. **AUTOMATIC ACTION** . . . Just step on a Ballymore and it locks to the floor. No levers to pull, no wing nuts, no locks. Nothing to handle or think about. Acts for you.
7. **EASY PORTABILITY** . . . when you step off, ladder rolls easily on four large-diameter casters.
8. **MAXIMUM STABILITY** . . . Rubber-tipped feet at extremities of ladder eliminate any tendency to wobble, roll, or "kick out".
9. **COMPLETE RANGE OF SIZES** FROM ONE TO THREE STEP WITHOUT GUARD RAILS; TWO TO EIGHT STEPS WITH GUARD RAILS.

INSIST ON ORIGINAL

Safety Step LADDERS

Send for FREE Catalog
BALLYMORE COMPANY
WAYNE 4, PA.

Please send me my copy of full illustrated Ballymore Catalog showing complete line of original BALLYMORE ladders.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer.

If you write maker identify as IEN - 0862

ALLOYS—Forgeable copper-zinc alloys, manganese and silicon content, for service as bearings, as mechanical parts, as corrosion-resistant materials. Machining instructions, properties, typical parts in 24-page Catalog FM. Mueller Brass Co., 1923 Lapeer Ave., Dept. IEN, Port Huron, Mich.

If you write maker identify as IEN - 0863

ALUMINUM—Strong natural-aging aluminum alloy resists shock and corrosion, has high yield strength, machinability, pressure tightness in cast form. Details on these properties in 24-page booklet, "40-E Alloy". Frontier Bronze Corp., 4872 Packard Road, Dept. IEN, Niagara Falls, N. Y.

If you write maker identify as IEN - 0864

BATTERIES—Nickel-iron-alkaline type for industrial truck service are described in 20-page "Storage Batteries" bulletin with a diagram on how they work, tables of electrical data, information on connectors. Thomas A. Edison Inc., 51 Lakeside Ave., Dept. IEN, West Orange, N. J.

If you write maker identify as IEN - 0865

BEARINGS—Sealed roller bearing has .375 to 1.6875-in. bore in 20 sizes. Bulletin SGR-54, 4 pages, tabulates dimensions, load capacity, life and speed factors. McGill Mfg. Co., 100 N. Lafayette St., Dept. IEN, Valparaiso, Ind.

If you write maker identify as IEN - 0866

BEARINGS—Nylon plastic bearings in Nylined steel-backed form. Bulletin 206, 8 pages, gives standard sizes and ratings, installation methods. Thomson Industries Inc., 1029 Plandome Road, Dept. IEN, Manhasset, N. Y.

If you write maker identify as IEN - 0867

BLOWERS*—Single and double-inlet design for pressures from 4 to 24 oz. as in combustion service. Bulletin CTB-103, 12 pages. Chicago Blower Corp., 9867 Pacific Ave., Dept. IEN, Franklin Park, Ill. *Your company letterhead required to obtain this literature.

If you write maker identify as IEN - 0868

BUILDINGS—Formed steel deck for roofs, sidewalls, partitions, ceilings, floors. Placing instructions, installation detail drawings, use as a permanent floor form in 16-page Catalog B-55-A. R. C. Mahon Co., Box 4666, Dept. IEN, Detroit 34, Mich.

If you write maker identify as IEN - 0869

ELECTRIC CIRCUITS—Copper-clad plastic laminated sheet to use in making printed electric circuits. Data on two types and suggestions on printed circuit design in 4-page "Insurok Copper-Clad Laminates". Richardson Co., 2661 Lake St., Dept. IEN, Melrose Park, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11447

Insure permanent leakproof joints in copper or brass piping

Fairbanks THREADLESS Valves

"Fairco-Braze" Threadless Valves for silver brazed joints. Cut costs, speed installation of piping systems handling steam, hot or cold water, oil, compressed air, carbon dioxide, Freon and many other liquids and gases.

The silver brazed connection withstands tension, compression, torsion and vibration to a far greater degree than any other type joint.

Solder End Threadless Valves for soldered joints. Get perfect seal of valves for type "K", "L" and "M" copper tubing with Fairbanks Solder End Threadless Valves. Simple, quick installation provides a smooth, compact, full flow assembly that has high resistance to corrosion.

Full line of Fairbanks Solder End Threadless Valves—Globes, Gates and Checks—have an unusually wide application range.

YOURS ON REQUEST: Fairbanks Valves Catalog, complete with cutaways, details, and specifications describing these Fairbanks Threadless Valves.

THE **FAIRBANKS** COMPANY
393 LAFAYETTE STREET NEW YORK 3, N. Y.
BRANCHES:
N. Y. 3 • Boston 10 • Pittsburgh 22 • Rome, Ga.

If you write maker identify as IEN - 11448

● The Stuard AUTOMATIC AIR SEPARATOR removes all moisture, oil and foreign matter from air lines. Does not waste air by continuous venting. Patented one-piece separator and eliminator chamber. Write for bulletin.

STUARD AUTOMATIC

AIR SEPARATOR

R & IE EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER, GREENSBURG, PENNA.

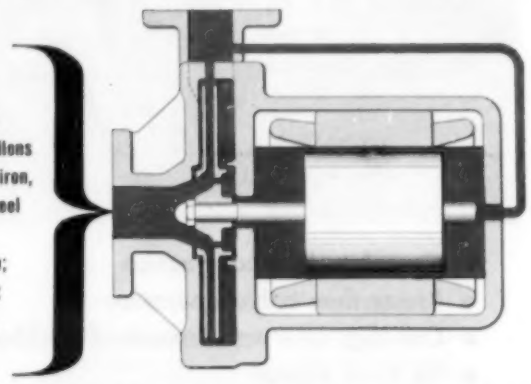
If you write maker identify as IEN - 11449

Chempump

THE PUMP THAT CAN'T POSSIBLY LEAK

. . . no mechanical seals . . . no stuffing box

⅛ to 3 horsepower, 0 to 180 gallons per minute; iron, stainless steel or monel construction; prices start at $96.00.



Think of what this means when handling toxic, corrosive or expensive process fluids. Chempump, with its magnetically-driven enclosed rotor can work—and save—for you, too. It is performance-proved in over 6 years of field experience. Write for complete data.

CHEMPUMP CORPORATION
1302 EAST MERMAID LANE • PHILA. 18, PA.

If you write maker identify as IEN - 11450

FOR POSITIVE, LOW-COST *SPROCKET DRIVES . . .*

TRY GENUINE **BEAD CHAIN**

Now successfully employed in radio and TV tuners, recorders, air conditioners, timing devices, etc. Designed for economical, positive gear trains or drives *free of slippage and backlash.*

VERSATILE BEAD CHAIN

has many other advantageous applications such as:

- part retainers
- remote control devices
- fan or ventilator pulls
- revolving displays

and many others

WRITE TODAY FOR CATALOG AND SPECIFICATION SHEETS

THE BEAD CHAIN MFG. CO.
59 Mountain Grove St., Bridgeport, Conn.

If you write maker identify as IEN - 11451

CUT COST with FLEXAUST®

The high-quality flexible spiral-wire reinforced hose — SIZES 1¼ in. to 36 in. ID

MOVE Air, Dust, Gases, Materials BY Pressure, Suction, Gravity

Check these *Basic Economies:*

✓ INSTALLED IN A HURRY—Even by unskilled labor. Easy-to-connect accessories. Completely air-tight. No costly layout preliminaries.

✓ STRONG, LONG LASTING—Bonded, double-ply. Stands up through abrasion, aging, corrosion, moisture, chemicals, unlimited flexing.

✓ MULTI-PURPOSE—Protects products and health from dust and fumes, improves comfort, makes many jobs simpler, more efficient.

✓ EASY TO MOVE—Light, fully portable, completely flexible with negligible stress for moving collector heads.

For sizes, coatings, accessories, and flow characteristics...write for catalog today.

Your local distributor has Flexaust—as well as the companion ducting, *Portovent.*

THE FLEXAUST COMPANY
Dept. IE-10, 100 Park Avenue, New York 17, New York
Formerly American Ventilating Hose Co.

FLEXAUST® PORTOVENT® BLOFLEX*
*Trade-mark

If you write maker identify as IEN - 11452

When you need EXTRA Seating and Table Space . . .

for Sales Meetings . . . Instruction Groups . . . Departmental Conferences

Here's your answer...

The *Clarin* TABLET ARM CHAIR THAT FOLDS

FOLDS FLAT IN 3 EASY STEPS

Foam rubber cushioning a CLARIN PLUS feature.

Here is combined seating and table capacity in one comfortable unit. At a moment's notice you can turn even a small office into an efficient meeting room. The built-in Tablet Arm is a marvel of skilled engineering. It lifts at a touch to let you sit down or get up—it folds down out of the way when chair is needed for seating only. The entire chair folds flat in seconds, in three deft movements, to a flat depth of only 3" for quick, safe stacking in minimum space. **Write today** for complete information on this quality engineered, space-saving chair.

Clarin Mfg. Co., Dept. 30,
4640 West Harrison Street, Chicago 44, Illinois

Clarin *There is a Clarin Steel Folding Chair for your every need. New FREE Catalog of complete line on request.*

ENGINEERED QUALITY MAKES THE BIG DIFFERENCE IN FOLDING CHAIRS

NEW LITERATURE —*Continued*

If you write maker identify as IEN - 0870

ELECTRIC CIRCUITS—Etched and printed circuits made to specification, also terminals and terminal boards. Bulletin, "Useco", 4 pages, shows production steps. U. S. Engineering Co., 521 Commercial St., Dept. IEN, Glendale, Calif.

If you write maker identify as IEN - 0871

BLAST CLEANING—Batch-type machine in six sizes from 1½ to 27 cu. ft. capacity uses Rotoblast centrifugal method to propel abrasive. Blastmaster Bulletin 225, 16 pages. Pangborn Corp., 230 Pangborn Blvd., Dept. IEN, Hagerstown, Md.

If you write maker identify as IEN - 0872

CLEANING MACHINES—Cold solvent type for cleaning metal parts has a pump and hose to direct flow over the work. It also agitates the solvent. Models and materials in 8-page Bulletin 444. Graymills Corp., 3705 N. Lincoln Ave., Dept. IEN, Chicago 13, Ill.

If you write maker identify as IEN - 0873

PROTECTIVE CLOTHING—Eleven samples of rubber-coated fabric and vinyl plastic available in the form of aprons, sleeves, leggings, spats. "Industrial Aprons", 4 pages, also describes rubber and coated-fabric gloves. Surety Rubber Co., 221 Hall Ave., Dept. IEN, Carrollton, Ohio

If you write maker identify as IEN - 0874

ELECTRIC CONNECTORS—Printed circuits are assembled by assistance of multi-contact card receptacles, contact strips, terminal strips. Bulletin PC-1, 8 pages. H. H. Buggie & Co., 726 Stanton St., Dept. IEN, Toledo 4, Ohio

If you write maker identify as IEN - 0875

PROCESS CONTROLS—Index to literature available from the company covers meters, controls, thermometers, pressure pages, pyrometers, valves, accessories together with data sheets on specific process applications. Bulletin 100-C, 16 pages. Minneapolis-Honeywell Regulator Co., Station 64, Dept. IEN, Philadelphia 44, Pa.

If you write maker identify as IEN - 0876

FLEXIBLE SHAFT COUPLING—Laminated steel cantilever spokes are the basis for Kushion-Torq design. Their resiliency becomes less as torque increases. Sizes are ½ to 1,500 hp. at 100 rpm. Bulletin 28, 4 pages. Brown Engineering Co., 23 N. Third St., Dept. IEN, Reading, Pa.

If you write maker identify as IEN - 0877

CRANES—Truck-mounted cranes in capacities to 35 ton are offered in three models. Hydraulic control is a feature. Bulletin TX-143, 28 pages. Harnischfeger Corp., 4400 W. National Ave., Dept. IEN, Milwaukee 46, Wis.

If you write maker identify as IEN - 0878

CUTTING MACHINES—Rotary machine cuts staple fiber into uniform lengths, produces flock, rubber bands, and fibreglass lengths. "No. 112 Cutter", 4 pages. Taylor-Stiles & Co., 44 Bridge St., Dept. IEN, Riegelsville, N. J.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11454

Engineered MOLDED RUBBER PARTS

Serving the —
Aircraft
Automotive
Appliance
Machinery
Electrical & Electronic
Safety Equip.
Instrument
and other industries

ACUSHNET specializes in "precision" molded rubber parts engineered to specifications. Utilizing the most modern techniques our Engineering Staff constantly is developing new approaches to old problems. By ingenious mold designing and compounding, yesterday's skepticism of rubber for critical uses has changed to complete confidence in this versatile material for application in countless vital assemblies.

Acushnet PROCESS COMPANY

Send for your copy of the Acushnet Rubber Handbook.

Address correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 11455

OFF SHELF DELIVERY!

New COMPACT DESIGN SAVES UP TO 40% SPACE!

Proven PERFORMANCE WITH EXTRA HIGH SAFETY FACTOR!

T-J *Spacemaker* CYLINDERS

OIL pressure to 750 — AIR to 200 P. S. I.

Now the sensational new T-J Spacemaker sets the pace in compact cylinder design and efficient performance! New "Self-Aligning" adjustable oil cushion means faster acceleration and better cushion than ever before . . . New T-J Super Cushion Flexible Seals for air insure positive cushion with automatic valve action for fast return stroke.

More plus features include—heavy wall, precision honed, hard chrome plated, seamless steel body . . . leakproof cylinder head to body construction . . . heavy duty, high-tensile, *hard chrome plated piston rod.* Write for bulletin SM-454-2. The Tomkins-Johnson Co., Jackson, Mich.

T-J TOMKINS-JOHNSON
RIVETORS . . AIR AND HYDRAULIC CYLINDERS . . CUTTERS . . CLINCHERS

If you write maker identify as IEN - 11456

Users applaud performance of Rockwood Ball Valves

"Operated 350,000 times with no maintenance." "Lasted 4 times longer than any other make of valve." "Greatly increased our production." "Definitely superior." "Out-wear and out-perform all other makes of valves used previously." "Safest for handling inflammable gas." "Operated 500 times a day without maintenance for over a year."

These and many other enthusiastic comments praise the efficiency of Rockwood Ball Valves — an efficiency based on these exclusive features:

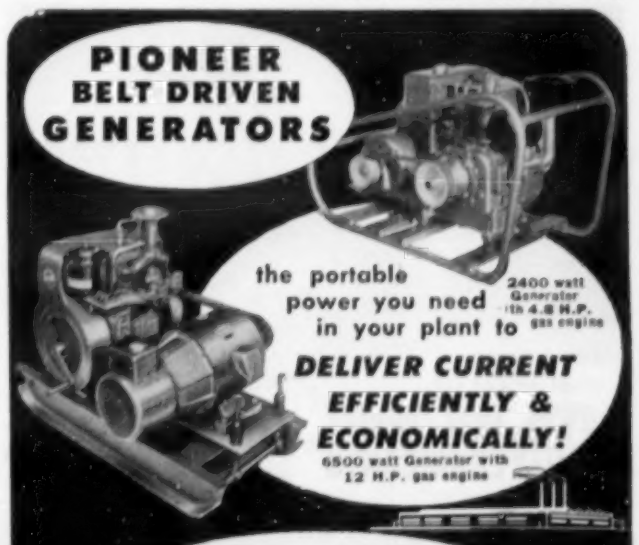
- Full, round flow
- Quick opening and closing
- Longer wear-resistance
- Leakproof seal

Plan now to put these benefits to work in your plant. Valves come in all pipe sizes. Tested and listed by Underwriters' Laboratories, Inc. Write today for complete information. Rockwood Sprinkler Company, 430 Harlow Street, Worcester 5, Mass.

ROCKWOOD BALL VALVES
For full, round flow efficiency

If you write maker identify as IEN - 11457

PIONEER BELT DRIVEN GENERATORS



the portable power you need in your plant to DELIVER CURRENT EFFICIENTLY & ECONOMICALLY!

2400 watt Generator with 4.8 H.P. gas engine

6500 watt Generator with 12 H.P. gas engine

For portable power inside or out the plant, Pioneer Generators are *dependable* and *capable* of operating under *all* weather conditions. For Stand-By insurance when regular power fails, generators can run power tools and lights to meet all your needs. *Over 20 years* of manufacturing experience gives you engineering know-how and efficiency. **Write today** for catalogs and prices on Pioneer 250 to 12000 watt Geenrators for every industrial use.

PIONEER Gen-E-Motor Corporation
5831 West Dickens Avenue • Chicago 39, Illinois

If you write maker identify as IEN - 11458

SINGLE-ACTING Air-Clamp

Bore	STROKES Horizontal	STROKES Vertical
1"	1"	½"-1"-2"
2½"	1"-2"-3"	½"-1"-2"
3"	1"-2"-3"	½"-2"
4"	2"-2½"	2"-3"
5"	3"	3"
6"	3"	2"

*Pneumatic Cylinders

NEW CATALOG READY! Complete line of simple, adaptable, compact spring-return air cylinders. Cut costs and speed up production the modern, Air Power way. Write today.

MEAD SPECIALTIES COMPANY

4114 No. Knox Ave., Dept. IEN-104A, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 11459

Take surface temperatures quickly, accurately... with the

The handy Alnor Pyrocon is unequaled for quick, accurate reading of all surface temperatures . . . whether surfaces are metallic or non-metallic, flat or curved. Accurate temperatures are easily understood on the Pyrocon's direct reading scale face . . . without interpolation or need of conversion tables. A wide selection of thermocouples and extension arms permits adaptation to many types of service. For complete details and prices, send for Bulletin No. 4257. Illinois Testing Laboratories Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 11460

HOW TO INSURE TOP METALWORKING PERFORMANCE for only $1.00

Send for a trial order of CMD ANTI-SCORING LUBRICANTS

For top performance on lathe centers, grinding, press fit, stamping, die posts and many other operations—CMD ANTI-SCORING Lubricant can't be beat. It makes your operations smoother, faster, easier and of course more profitable. Prevents scoring, seizing, galling...all bugaboos in modern machining work. This trial order will start *you* on *your* way to top performance where a high pressure lubricant is needed. You will be surprised to find how long it lasts. Get yours today in both oil and grease consistencies.

TRIAL ORDER—TWO FOUR OZ. TUBES $1.00

Send me my order of CMD Lubricants right away! { Bill me / Bill my company

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Company Name _____

Address _____

City _____ State _____

Chicago Manufacturing and Distributing Company
1904 West 46th St., Chicago 9, Illinois

CHICAGO MANUFACTURING & DISTRIBUTING CO.

NEW LITERATURE—Continued

If you write maker identify as IEN - 0879

DRAFTING—Steel and wood drafting tables, drawing boards, file cabinets in sectional design for storing prints and tracings, accessory equipment. Catalog 14, 32 pages. Hamilton Mfg. Co., Dept. IEN, Two Rivers, Wis.

If you write maker identify as IEN - 0880

DRIVE BUSHINGS—Taper-lock bushings secure a sheave, pulley, coupling, sprocket, impeller firmly to a shaft, disassemble readily, provide interchangeability for various shaft sizes. List prices in 8-page Bulletin A-628A. Dodge Mfg. Co., 500 S. William St., Dept. IEN, Mishawaka, Ind.

If you write maker identify as IEN - 0881

CHAIN DRIVES—Stock roller chains and sprockets are listed in 64-page Catalog 754 following selection instructions. List prices, Taper-Lock sprockets, attachment links, chain tools are included. Diamond Chain Co., 449 Kentucky Ave., Dept. IEN, Indianapolis 7, Ind.

If you write maker identify as IEN - 0882

CHAIN DRIVES—Hy-Vo chain is designed to practically eliminate chordal action, to carry up to 190 hp. per inch of width at speeds to 6,000 fpm. What this means, how it works, chain data, are in 16-page Catalog C-72-51. Morse Chain Co., 7601 Central Ave., Dept. IEN, Detroit 10, Mich.

If you write maker identify as IEN - 0883

HYDRAULIC DRIVE—Disconnecting power takeoff for engines to about 600 hp. at 1,000 rpm. provides fluid connection with positive release from load when desired. Model HUD has its own radiator. Bulletin 506, 8 pages. Twin Disc Clutch Co., 1310 Preston St., Dept. IEN, Rockford, Ill.

If you write maker identify as IEN - 0884

VARIABLE SPEED DRIVE—Adjustable motor base is combined with adjustable-pitch pulley to produce variable output speed from a constant-speed motor. Ratings are ½ to 15 hp. Selection tables in 28-page Bulletin V-545. Reeves Pulley Co., 800 N. Wilson St., Dept. IEN, Columbus, Ind.

If you write maker identify as IEN - 0885

ELECTRIC DUCT—Steel-enclosed trolley busway provides power outlet connection to stationary and moving equipment. Track rating is 60 amp. at 250 volts. Suggested installation drawings in 40-page Bulletin 45. Feedrail Corp., 125 Barclay St., Dept. IEN, New York 7, N. Y.

If you write maker identify as IEN - 0886

DUST COLLECTING—Troubles encountered in collecting dust from a foundry cupola are described in technical-article form by 8-page Bulletin 3 along with a recommendation on how to collect dust "dry". Mechanical Industries Inc., 956 Grogan Bldg., Dept. IEN, Pittsburgh 22, Pa.

If you write maker identify as IEN - 0887

DYNAMOMETER—Combination unit measures torque and speed of electric motors from 1/500 to 1½ hp. Ranges for speed, torque, accuracy are in 4-page bulletin, "Measure Torque". Magtrol Inc., Box 29, Dept. IEN, Tonawanda, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11461

FRANKE fine pitch GEARS

AS you want them — WHEN you want them

SPURS & PINIONS
HELICALS & SPIRALS
SPROCKETS & RACKS
BEVELS & MITRES
WORMS & WORM GEARS
SPLINE SHAFTS & SPLINE FITTINGS

Specialists in manufacture of Fine Pitch Gears to close tolerances . . . from ordinary commercial grades to the most exacting aircraft specifications. Nylon gears with teeth molded or cut. Also gears made from stampings, with teeth stamped or cut. Send blueprints for proposals and/or engineering collaboration. No obligation to you.

FRANKE GEAR WORKS, INC.
1922 W. COLUMBIA AVE., CHICAGO 26, ILL.

If you write maker identify as IEN - 11462

THE 3XP TYPE RAYONIC® CATHODE RAY TUBE BY Waterman

The 3XP type RAYONIC CATHODE RAY TUBES have made possible more sensitive oscilloscopes with greater trace brilliance, without increasing present anode potentials. Waterman tube engineers pioneered a new approach to cathode ray tube design in developing this type tube. That research has paid off in a tube that provides a light output four times greater, and vertical sensitivity twice as great as comparable cathode ray tubes operating the similar anode potentials. All this has been accomplished without sacrificing low interelectrode capacities. These characteristics make the 3XP ideal for high frequency video work as well as low repetitive operation. Because of its unique shape and size, the 3XP lends itself readily to multi-tube oscilloscopy. The 3XP is available in P1, P2, P7, and P11 Phosphors.

OTHER WATERMAN RAYONIC TUBES INCLUDE:
3JP1 & 3JP7 JAN CR TUBES
3MP1, 2, 7, 11 CR TUBES
3SP1, 2, 7, 11 CR TUBES

WATERMAN PRODUCTS

SEND FOR COMPLETE DATA TODAY

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 26, PA. CABLE ADDRESS: POKETSCOPE

If you write maker identify as IEN - 11463

Study Motion it's Simple with the Strobotac®

Machines operating as fast as 100,000 rpm can be observed in S-L-O-W motion with the G-R Type 631-BL STROBOTAC. No mechanical or electrical connection with the equipment being observed is required. The STROBOTAC effectively slows down any repetitive motion . . . even as slow as a small fraction of an rpm . . . so the exact performance of the most complex part can be seen.

Thousands of STROBOTAC's are in use in industry in design, engineering, manufacture, inspection, maintenance and sales.

Priced at $150, this instrument operates from any 115-volt 60-cycle line. Its motion-stopping range is from 60 to 100,000 rpm. In addition, it is calibrated to read directly from 600 to 14,400 rpm for use as an accurate electrical tachometer. Let us tell you more about G-R Stroboscopes. Write for the Stroboscope Bulletin.

STROBOTAC®

Made Exclusively by

GENERAL RADIO Company

275 Massachusetts Avenue, Cambridge 39, Massachusetts, U. S. A.

90 West St. NEW YORK 6 · 8055 13th St., Silver Spring, Md. WASHINGTON, D.C. · 920 South Michigan Ave. CHICAGO 5 · 1000 North Seward St. LOS ANGELES 38

If you write maker identify as IEN - 11464

for Eye-Level Readings . . .

AUTO-LITE

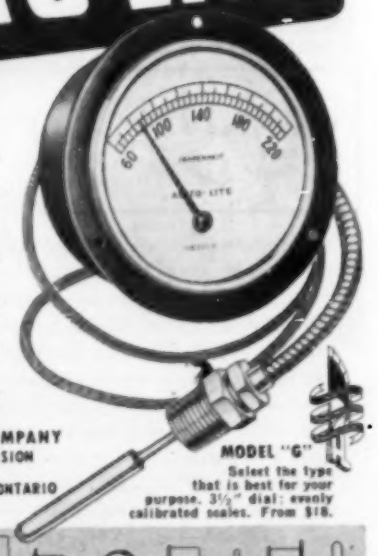
TEMPERATURE INDICATORS...

Precision-built indicators provide accurate temperature readings.

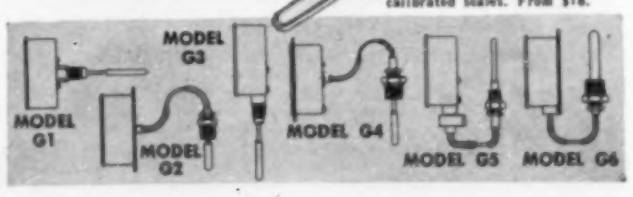
Low-cost protection . . . due to large, specialized production. Wide selection of dial ranges to meet specific requirements. Choice of stock types available as shown.

Send for new catalog, describing many thermometer styles.

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION
TOLEDO 1, OHIO
NEW YORK • CHICAGO • SARNIA, ONTARIO



MODEL "G"
Select the type that is best for your purpose. 3½" dial: evenly calibrated scales. From $18.



If you write maker identify as IEN - 11465

CHESTER *Electric* HOISTS

Make heavy handling jobs easier!

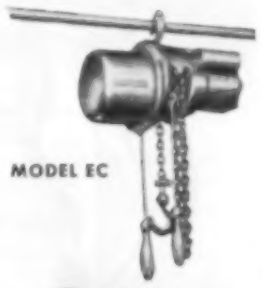
Now, an outstanding new line of Chester Electric Hoists is available to help you put more heavy handling jobs on a paying basis in your plant.

Ask your distributor for complete information on the new Chester Electric Hoists, or write us for specification folders, E 853 and EC 953.

Remember Chester, too, for the complete line of Spur Geared Hand Chain Hoists and Overhead I-Beam Trolleys. ¼ to 25 ton. Ask for Catalog.

MODEL EC: 3 sizes, ¼ to 1 ton. Welded alloy steel link chain, pendent rope control. Lifts adaptable up to 66 ft.

MODEL E: 5 sizes, ¼ to 2 ton. Flexible wire rope-cable lift, pendent push button control. Lifting speeds 15 to 30 f.p.m.



MODEL EC

MODEL E

National PRODUCTS

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio

If you write maker identify as IEN - 11466

Lightweight Vise that's also a Work Bench...it's RIGID Tristand

Tray pushes up easily to fold Tristand, pushes down easily to set up. Holds stand rigid.

...with built-in folding tray

Folds up for easy carrying to job and it's extra lightweight.

Stand and tray are all one unit—no loose parts. Quick easy set-up and take down. Extra-light weight but strong, rigid. Full size vise base—3 benders, ceiling brace screw, pipe rest, lots of tool slots. An unbeatable value—see it at your Supply House!

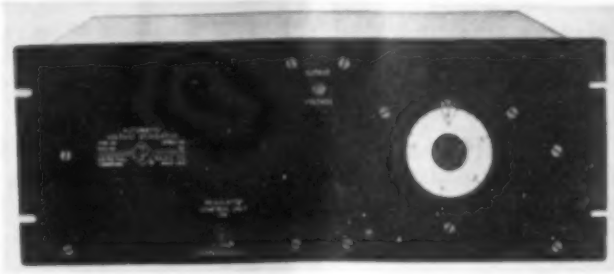
The Ridge Tool Company • Elyria, Ohio, U.S.A.

RIGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 11468

Control - Line voltage regulator, automatic action, capacity to 6 kva.

Source: GENERAL RADIO CO.
275 Mass. Ave., Dept. IEN, Cambridge 39, Mass.



For laboratory and plant

Type 1570-A is a new automatic voltage regulator consisting of a Variac auto-transformer to adjust output voltage, a buck-or-boost step-down transformer to multiply the power rating of the Variac and a servo mechanism to position the Variac. The servo mechanism is a proportional control design for accuracy and transient response.

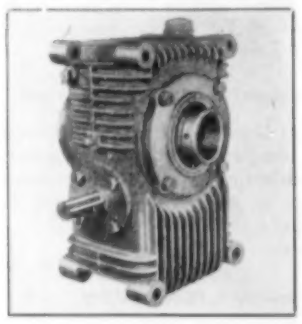
Output voltage is adjustable, over a range between plus and minus 10 per cent, from a base value of 115 volts in one model and 230 volts in another. A plus and minus 20 per cent range connection is also available at one-half the power capacity and accuracy. Response speed ranges from 10 to 40 volts per sec. depending on the output voltage and the variation range.

Three types of mounting include a metal cabinet for bench use, a metal cabinet with relay rack fittings and a metal box for wall or switchboard. All models are listed at $465.

If you write maker identify as IEN - 11469

Drive - Worm and gear reducer 5 to 60 to 1, mounts on driven shaft

Source: MICHIGAN TOOL CO.
7171 E. McNichols Road, Dept. IEN, Detroit 12, Mich.



Available from stock

New design of speed reducer in the company's Cone-Drive line is fitted with a sleeve rather than an output shaft to mount direct on the shaft of a driven machine. A bracket or torque arm is installed with the reducer to prevent it from rotating around the driven shaft. A bell housing can be supplied to take a standard NEMA C-type flanged motor when a motor driven reducer is required. No bed plate or other mounting needed.

Three sizes provide 2, 2½ and 3-in. center distances and can be furnished with the pinion under or over a horizontal shaft and on either side of a vertical shaft. Reduction ratios for the 2 and 2½-in. center distance assemblies are 5 to 50 to 1 and for the 3-in. assemblies are 5 to 60 to 1. Additional output speed reduction can be secured when the motor is connected to the input shaft by means of V-belt and sheave.

Bore sizes for the 2-in. unit range from 1 to 1⅜ inches. The 2½-in. bore sizes range are 1 to 2 inches. The 3-in. assembly is available with bore from 1 7/16 to 2½ in., all in steps of 1/16 inch. Capacities range from fractional to 9-hp. output.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11470

Stop CORROSION in your Steam System WITH CORAVOL

When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

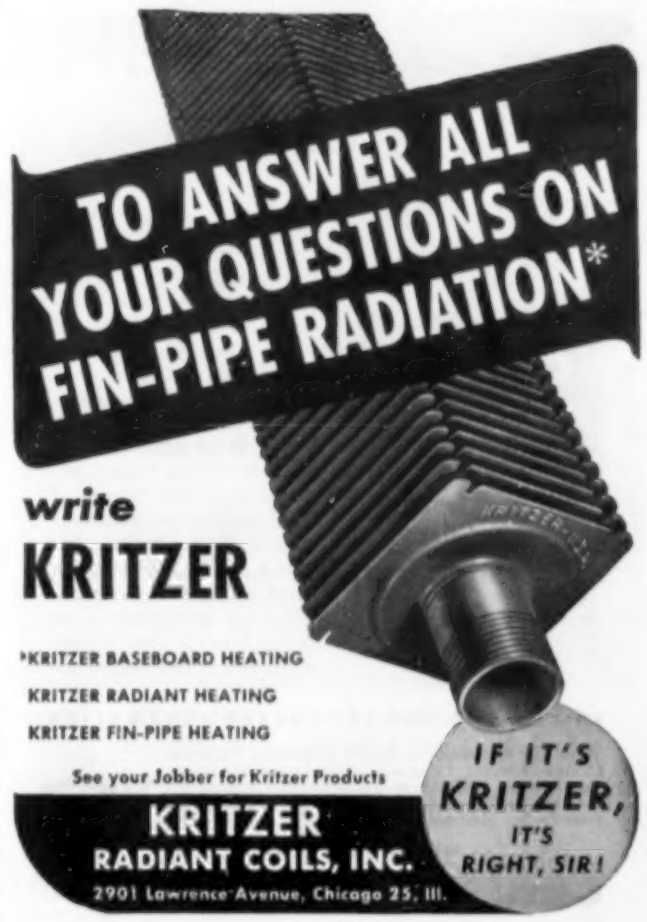
CORAVOL is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

If you write maker identify as IEN - 11471

TO ANSWER ALL YOUR QUESTIONS ON FIN-PIPE RADIATION*



write KRITZER

*KRITZER BASEBOARD HEATING
KRITZER RADIANT HEATING
KRITZER FIN-PIPE HEATING

See your Jobber for Kritzer Products

IF IT'S KRITZER, IT'S RIGHT, SIR!

KRITZER RADIANT COILS, INC.
2901 Lawrence Avenue, Chicago 25, Ill.

If you write maker identify as IEN - 11472

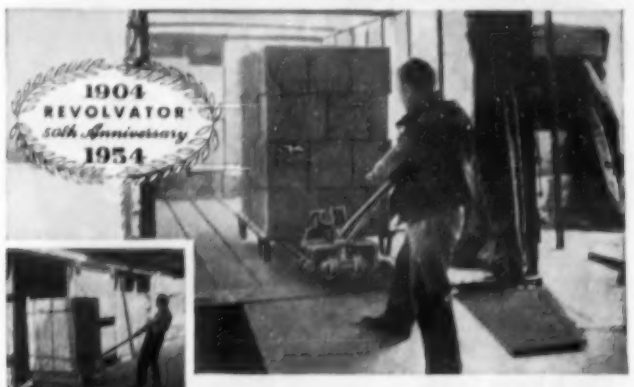
M·S·A...A COMPLETE LINE OF DUST SAMPLING AND COUNTING INSTRUMENTS

The instrument shown above is the M.S.A. Electrostatic Sampler, a unit that collects dusts, metal fumes, smoke from industrial air to determine harmful contamination. In addition, M.S.A. makes a variety of other dust collecting and sampling units for every purpose. Also, Dust Counting Microscope and Dust-Vue Microprojector for accurate dust counting and determination. Write for complete details.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
201 North Braddock Avenue
Pittsburgh 8, Pa.

If you write maker identify as IEN - 11473



REVOLVATOR *RED-GIANT* features Safety-Ease

Durability—built in by 50 years of Revolvator Co. experience—is still the fundamental of the Red Giant liftruck line. Maneuverability, plus the safety of their exclusive double stroke mechanism, make the models shown leaders in their fields. There is a Red Giant liftruck available for every use—for every capacity.

Write for the full facts today.

REVOLVATOR CO.
8759 Tonnele Ave. North Bergen, N. J.

If you write maker identify as IEN - 11474

first with hermetically sealed receptacles

. . . and still the leader for true hermetically sealed plugs and receptacles . . . pin or socket insert assemblies . . . in a variety of "AN" (Air Force-Navy) and Cannon K and KK shell sizes. Square, circular, or hex flanges with locknuts for panel mounting. Many insert arrangements available. Standard shell finish now combines copper flash, heavy cadmium plate and tin plate. Steel shells and contacts. Vitreous insulators fuse contacts to the shell to provide perfect hermetic seal.

IN PIN AND SOCKET INSERT ASSEMBLIES

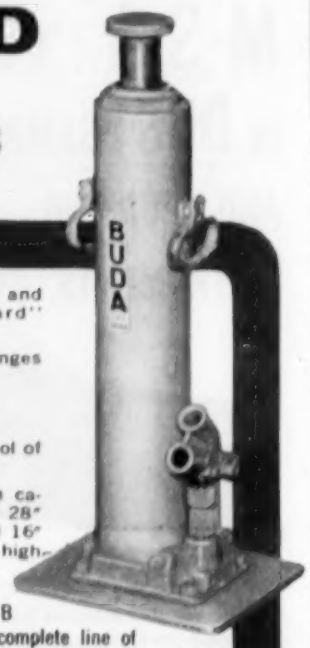
Write for Hermetically Sealed Connector Bulletins. Cannon Electric Company, 3209 Humboldt Street, Los Angeles, California. Factories in Los Angeles; East Haven; Toronto, Canada; London, England. Representatives and distributors in all principal cities.

Refer to Dept. 112

CANNON ELECTRIC Since 1915

If you write maker identify as IEN - 11475

2-SPEED HIGH-LIFT HYDRAULIC JACKS



- Use "fast" speed for light and medium loads; "standard" speed for capacity loads
- One simple adjustment changes lifting speed
- One-man operated—easily portable
- Operator has positive control of lowering under load
- Available in 25 and 50-ton capacities. 25-ton models are 28" and 22" high with 22" and 16" lifts; 50-ton model is 26" high with 20" lift.

Write for new Bulletin 1515-B and full details on BUDA's complete line of mechanical and hydraulic jacks. "A jack for every job."

BUDA THE BUDA COMPANY Harvey, Illinois

Division of Allis-Chalmers Manufacturing Company

If you write maker identify as IEN - 11476

The All New MOBILIFT 4000 Pounder

Has Everything You Want in a "Sit-Down" FORK LIFT TRUCK

MODEL D-424 4,000 lbs. capacity at 24" Load Center 83" hydraulic mast lift height 108"

Check these trend-setting features . . .

- CHRYSLER 65-bhp 6 cyl. GAS ENGINE.
- CHRYSLER GYROL FLUID COUPLING.
- MOBILIFT CONSTANT-MESH TRANSMISSION with a Push-Pull Lev-R-Matic Control for forward and reverse —No Clutch Pedal—No Gears to Shift—7 speeds forward, 2 reverse
- MOBILIFT FULL-FLOATING DRIVE AXLE.
- BALL-BEARING WORM & NUT TYPE STEERING.
- HYDRAULIC BRAKES.
- EASY TO GET ON AND OFF—NO OBSTRUCTIONS.
- FREE ACCESS FROM LEFT OR RIGHT SIDE.
- ONE-PIECE HOOD RAISES FOR EASY SERVICE ACCESSIBILITY.

LAMSON MOBILIFT CORP.

Home Office: Portland, Ore. Offices in principal cities

LAMSON MOBILIFT CORP.
710 Lamson St., Syracuse 1, N. Y.
Please send complete information on ☐ 3000- and ☐ 4000-lb. capacity units to:
Name_____ Title_____
Company_____
Address_____
City_____ Zone____ State_____

NEW LITERATURE—Continued

If you write maker identify as IEN - 0888

ELECTRONIC PRODUCTS—Small fixed and adjustable ceramic capacitors including feed-through units, also deposited-carbon resistors, printed circuits. Catalog D-54, 16 pages. Erie Resistor Corp., 644 W. 12th St., Dept. IEN, Erie, Pa.

If you write maker identify as IEN - 0889

ELEVATORS—Portable elevators for hand and power operation, 500 to 2,000 lb. ratings, also elevating tables, accessories, uses. Bulletin 54, 12 pages. Economy Engineering Co., 4511 W. Lake St., Dept. IEN, Chicago 24, Ill.

If you write maker identify as IEN - 0890

EQUIPMENT*—Chain and sprockets for conveying and drive service, speed reducers, variable-speed drives, bearings, belt and overhead conveyors. Catalog 950, 340 pages. Link-Belt Co., 307 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.
*Your company letterhead required to obtain this literature.

If you write maker identify as IEN - 0891

FURNITURE—Folding table is combined with attached benches to use when needed, to store out of the way otherwise. Bulletin KP-37, "Sico System", 6 pages. Seating Inc., 6045 Pillsbury Ave., Dept. IEN, Minneapolis 19, Minn.

If you write maker identify as IEN - 0892

PRESSURE GAGES—Round-chart recording models feature new design of pressure elements, vacuum to 80,000 lb., presented in 24-page Bulletin 6-10 along with details on the instruments, chart ranges, accessory equipment. Foxboro Co., 42 Neponset Ave., Dept. IEN, Foxboro, Mass.

If you write maker identify as IEN - 0893

GASKETS—Asbestos treated with Teflon forms the basis of Chempac gaskets and packings for chemical and process service. Standard designs and application notes in 6-page Bulletin PK-80A, also solid Teflon sheet. Johns-Manville, 22 E. 40th St., Dept. IEN, New York 16, N. Y.

If you write maker identify as IEN - 0894

GEARS—Hardness to about 60 Rockwell C is emphasized in 8-page Bulletin DRB for the company's Duti-Rated gears. A rating table on typical gear sets shows compact dimensions made possible. Foote Bros. Gear & Machine Corp., 4545 S. Western Blvd., Dept. IEN, Chicago 9, Ill.

If you write maker identify as IEN - 0895

STAMPED GEARS—Stock sizes in 16, 24, 32, 48, 56, and 80 diametral pitch are listed in 4-page Die List No. 4. These have a 14½-deg. pressure angle. Winzeler Mfg. & Tool Co., 1712 W. Arcade Place, Dept. IEN, Chicago 12, Ill.

If you write maker identify as IEN - 0896

GRINDING WHEELS—Catalog 1052 has 28 pages of data on wheels and mounted points of aluminum-oxide and silicon-carbide abrasives. Grouping is by application such as sharpenings tools, surface grinding, cutting off. Norton Co., 36 New Bond St., Dept. IEN, Worcester 6, Mass.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

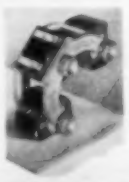
If you write maker identify as IEN - 11477

". . . and don't ever borrow one of his MAGIC POSITIONERS 'cause he'll just bite your head off!!!"

Your third hand!

A completely universal holding device for production and welding operations.

Full 360° adjustment on each magnet. Graduated scale with locking device. 30 or 45 lb. lift permanent Alnico V magnets.

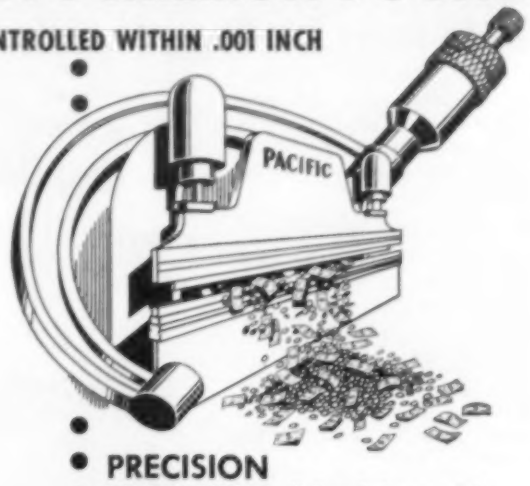


Write Dept. E for literature

STANDARD PORTABLE CORD COMPANY, INC. Jamestown, New York

If you write maker identify as IEN - 11478

TWO MILLION POUNDS CONTROLLED WITHIN .001 INCH



PRECISION

1000 Ton Pacific Hydraulic Press Brakes repeatedly form bends within .001". The ram remains level within minutes of arc.

PRODUCTION

Pacific Hydraulic Press Brakes in operation today multiple punch heavy steel fence posts at the rate of 1000 per hour.

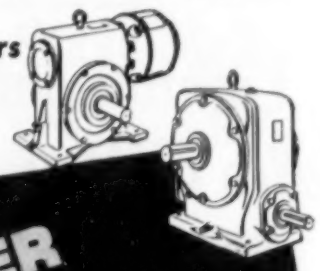
PROFITS

Precision + Production = Profits. Investigate today.

PACIFIC INDUSTRIAL MFG. CO.
848 - 49th Avenue - Oakland, Calif.

If you write maker identify as IEN - 11479

How cost-wise buyers rate SPEED REDUCERS



GOOD BETTER ✓ BOSTON Gear

REDUCTORS AND RATIOMOTORS

IN STOCK AT 92 BOSTON GEAR DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

Get the 384-page BOSTON Gear Catalog . . . industry's most valued "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN - 11480

DIRECTED AIR FLOW for

FASTER UNIFORM HEATING! BLUE M STABIL-THERM OVENS GIVE BEST RESULTS for PRODUCTION for PILOT PLANTS for LABORATORIES

BLUE M'S IMPROVED FORCED DRAFT OVENS NOW HAVE DIRECTED AIR FLOW. TURBO BLOWER CONVECTS TEMPERED AIR VERTICALLY THRU REAR PLENUM CHAMBER. NEW DESIGN—ADDED CONVENIENCE.

- ✓ Automatic Trigger Control — U.L. App'v'd. ± ½°C. Sensitivity.
- ✓ Power Selector Switch — Adjusts wattage in 3 steps.
- ✓ Temperature Range — 100°F. to 500°F.
- ✓ Double Wall Design
- ✓ Inside Dimensions — 19" W. x 15" D. x 18" H.
- ✓ Wiring Complete — Meets Nat. Elec. code

MODEL NO. OV-490 Stainless Interior. Enameled Steel Exterior. 115V, 60c A.C. $295.00 complete

MODEL NO. OV-510 All polished Stainless Steel, Type 18-8 $375.00 complete

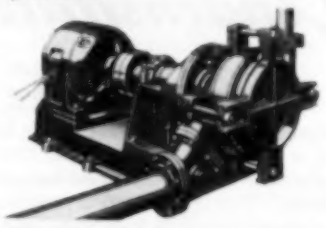
BLUE M ELECTRIC COMPANY
138th and Chatham, Blue Island, Illinois

If you write maker identify as IEN - 11481

Only the MORRIS Type R SLURRY PUMP has these 4 features

1. Gland is under suction pressure only. This feature practically eliminates packing troubles.
2. For dismantling, you need remove only four bolts. No internal studs or bolts . . . no troublesome fits or joints.
3. You can remove impeller and liner without disturbing piping.
4. Shell interchangeable for right or left-hand rotation. Suction and discharge nozzles can be rotated to positions in any of four quadrants.

The New Type "R" Morris Slurry Pump handles caustic or acid mixtures containing abrasives or solids; also ore concentrates, tailings, slag, residue from filters and classifiers.



Write for specifications and operation data on pumps best suited to your particular needs. No charge or obligation.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Sales Offices in Principal Cities

MORRIS CENTRIFUGAL PUMPS

If you write maker identify as IEN - 11482

Goodbye to old quench and temper methods!

SEE HOW

Martempering & Austempering CUT COSTS

FOR THESE LEADING MANUFACTURERS!

Shown here are typical examples of important production savings made possible by Ajax Electric Salt Bath martempering and austempering.

Here, briefly, are the reasons for the outstanding superiority of this method: *First cost of equipment is only ½ to ⅓ that of any other conventional system!* Distortion is so negligible that parts can usually be finish machined before hardening. Final grinding is seldom necessary. Scale, decarb and quench cracks are avoided. Ductility is increased.

Write for Technical Bulletin #500, and list of documented case histories of martempering and austempering installations covering a wide variety of industries.

$50,000 Saved ANNUALLY!

Austempering this well-known electric shaver head (0.003" thick) in an Ajax furnace scored a $50,000 a year saving over conventional quench and temper methods! Austempering produced tougher heads. Rejects due to cracks were reduced from 3.6% to .05%. Uniform hardness is obtained. Distortion is easily held within specified limits.

Grinding TIME Cut 80%

Martempered in Ajax furnaces and drawn to Rc 62-63, these SAE-52100 bearing races show an average out-of-round distortion of only 0.002-0.003" in heat treating. Grinding time was reduced from 50 minutes to less than 10 minutes per race.

One Man HANDLES ENTIRE Production

Lawn mower blades (SAE-1065) are austempered in a fully mechanized Ajax salt bath line to produce the critical combination of Rc 48-52 PLUS high ductility. Finished blades can be bent to horseshoe shape without cracking . . . and they're tough enough to cut nails! Production is 550 blades an hour. One man handles the entire job!

AJAX

electric SALT BATH furnaces

AJAX ELECTRIC COMPANY
900 Frankford Avenue • PHILADELPHIA 23, PA.

If you write maker identify as IEN - 11484

Printing - Photocopy equipment exposes, develops, prints dry sheet

Source: EASTMAN KODAK CO.
343 State St., Dept. IEN, Rochester 4, N. Y.

"Legal size"

In 50 sec. one copy, measuring to 8½ by 14 in., can be produced from a letter, report, card, chart, magazine page in this new Verifax photocopy equipment. The machine is a companion unit to the one, previously described IEN-4844-53, in which work size is maximum at 8½ by 11 inches. The new unit is particularly suited where legal size documents are to be copied. It will also handle the smaller work.

The document to be copied and a sheet of Verifax Matrix paper are placed in contact on the printing surface and are exposed to a bank of lights for a few seconds. The matrix sheet is then placed in the activator in the bottom of the printer and is left there for 20 seconds. It is withdrawn in contact with a sheet of Verifax print paper. This paper becomes the first copy when it is stripped away from the matrix. The latter can then be reinserted in the activator and removed with another sheet of print paper to produce a second copy. This can be repeated for a required number.

Three can be made in a minute or less. Each copy is practically dry and ready for immediate use. List price for the legal size machine is $395. This compares with $240 for the previously described smaller unit.

If you write maker identify as IEN - 11485

Valve - Solenoid actuated, pressure operated for corrosive fluids

Source: AUTOMATIC SWITCH CO.
391 Lakeside Ave., Dept. IEN, Orange, N. J.

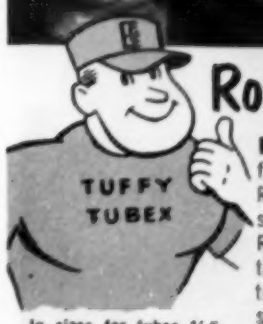
Bulletin 8338

The solenoid in this new two-way Bulletin 8338 valve operates a pilot cylinder that connects to a source of pressure employing air, oil or water. This pressure applies back of a spring equipped piston in the main operating cylinder of the valve for either normally open or normally closed assembly. The valve operator does not come into contact with the fluid control so corrosive fluids can be handled and the body material can be selected to meet given requirements. The stuffing box is equipped with teflon packing to provide a tight seal for the sliding stem. The valve can be mounted in any position.

Sizes range from ½ to 2 in. with bronze body and trim and a composition disc, with a cast iron body and nickel alloy trim, a cast steel body and stainless steel trim, an Aloyco steel body and stainless steel trim, or a Monel Metal body and trim. The solenoid can be specified for operation on 110-volt dc. or 110 or 220-volt 60-cycle ac. in standard construction. Other voltages, either ac. or dc., can be specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11486



Roll tubes accurately!

ELLIOTT TUBE EXPANDERS for condenser and heat exchanger tubes. Rotating, parallel self-feeding rolls insure uniform action and stronger joints. Rolls have radius on front and back ends to prevent any sharp offsets inside the tube. Made of the highest grade tool steel, properly heat treated. Bulletin Y-38 gives complete details. Write Elliott Company, Lagonda Div., Springfield, Ohio.

In sizes for tubes ½" through 1½", 16 gage in four types.

Y4-14

ELLIOTT Company

STEAM TURBINES • MOTORS • GENERATORS • DEAERATING HEATERS • EJECTORS • CONDENSERS • CENTRIFUGAL COMPRESSORS • TURBOCHARGERS • TUBE CLEANERS • STRAINERS

If you write maker identify as IEN - 11487

NEW! Rapistan® SEALED CASTER

5200 Series Rapistan Sealed Caster with 6" Sealed MB Demountable Wheel.

at ⅓ less cost than ordinary non-sealed casters!

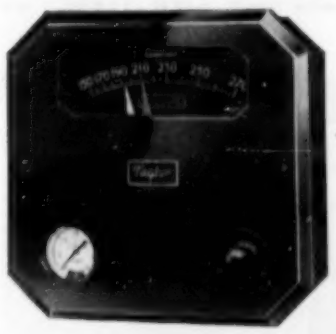
Now, for the first time, this revolutionary Rapistan development gives you a heavy-duty cold-forged *sealed* caster at *⅓ less cost than ordinary leading non-sealed casters!* Save in longer caster life, improved performance, lower maintenance. Dirt, acids, alkalis, brines, other chemicals are *sealed out* of coin-hardened raceways. Ask your Rapistan distributor to show you the comparative service chart, or write direct.

YOURS FREE! *Write for handbook describing Rapistan casters including new 5200 Series.*

The RAPIDS-STANDARD COMPANY, Inc.
231 Rapistan Building • Grand Rapids 2, Michigan

Rapistan® FASTEST GROWING NAME IN CASTERS

If you write maker identify as IEN - 11488



Responsive Inexpensive Dependable

FOR control problems where a record is not important, and where automatic reset or PRE-ACT* derivative action are not required, the Taylor 86R FULSCOPE* Indicating Temperature or Pressure Controller is the logical answer. It will give you precision control and dependable performance at moderate cost.

Close throttling control is achieved by the Universal Sensitivity Adjuster, which provides sensitivity values for an infinite number of operating conditions. Available with Full Range sensitivity (*0.14% to 100% of scale range*) adaptable to any known industrial process, or High Range (*0.14% to 7% of scale range*) for processes having small time lags.

Direct-Set feature (*optional*) permits easy, immediate adjustment of control point.

Easily convertible in the field from temperature to pressure control or vice versa; ranges also readily interchangeable.

Output air pressure gauge provides check on controller performance.

Ask your Taylor Field Engineer, or write for **Catalog 86R.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

*Trade-Mark

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN - 11489

GOOD NEWS ABOUT WHEELS

NEWS! About how 44 centers and only 22 bearings give a choice of 144 sizes to 12" x 4".

NEWS! About American Steelite® light-weight champs—weighing up to 9 pounds less than ordinary wheels.

NEWS! About American Tread-Lock method—the tread is *Rolled On So It Won't Roll Off!*

NOW! Get all this NEWS in the NEW bulletin on American Industrial Wheels, from:

The American Pulley Company
4240 WISSAHICKON AVE., PHILADELPHIA 29, PA.

Gentlemen:
I want the NEWS about Wheels—rush me your new American Steelite® Wheel Bulletin.

Name_____
Firm Name_____
Address_____
City_____ Zone_____ State_____

If you write maker identify as IEN - 11490

RELAYS

IMMEDIATE DELIVERY FROM STOCK

Special attention is given to orders of one or more relays for engineering and lab samples or for experimental purposes. 24 hour delivery will permit you to draw from our stock rather than schedule your orders for months in advance.

Relay Sales maintains the world's largest stock of relays for practically every application. Nothing but first line products of leading manufacturers are carried. Each relay is brand new, individually inspected and unconditionally guaranteed. Prices less than market.

Hundreds of Types in Stock

STANDARD TELEPHONE RELAYS
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MIDGET RELAYS
TIMERS
AIRCRAFT CONTACTORS
ROTARY RELAYS
WESTERN ELECTRIC TYPE "E" RELAYS
KEYING RELAYS
HERMETICALLY SEALED RELAYS
VOLTAGE REGULATORS AND CUTOUTS
DIFFERENTIAL AND POLARIZED RELAYS
SPECIAL RELAYS
BK-SERIES
ANTENNA AND CERAMIC RELAYS
MOTOR AND CONTROL RELAYS
RELAY ASSEMBLIES
LATCHING AND INTERLOCKING RELAYS
MECHANICAL ACTION RELAYS
RATCHET AND STEPPING RELAYS

Relay Sales

Phone: AUstin 7-0709
Write for New Relay Catalog C-5
4715 W. MADISON STREET
CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 11491

New...Free... Complete...

book on electrical controls for automatic operation

Here's a 20-page book for you, Mr. Original Equipment Manufacturer, you, Mr. Contractor, and you, Mr. Plant Electrician. Find out how Westinghouse products can contribute to more automatic operation—whether in metal-working production equipment, processing equipment or handling equipment. Westinghouse Motor Controls give greater dependability, less maintenance down time, longer productive life through simpler design, standardization of components, greater accessibility to parts, and so on. A full line of controls and your Westinghouse Representative are at your service.

Write for B-5882, Westinghouse Electric Corp., P.O. Box 868, Pittsburgh 30, Pennsylvania. J-30174

YOU CAN BE **SURE**...IF IT'S
Westinghouse

Westinghouse Electric Corporation
3 Gateway Center, Pittsburgh 30, Pa.

Please send me Motor Control Book, B-5882.

Name _____
Company _____
Address _____
City _____ State _____

NEW LITERATURE—*Continued*

If you write maker identify as IEN - 0897

GRINDING WHEELS—Rubber-bonded centerless grinding wheels operate at 6,500 to 8,500 surface fpm. Sizes and performance examples in 4-page Bulletin 6925. Raybestos-Manhattan Inc., 61 Willett St., Dept. IEN, Passaic, N. J.

If you write maker identify as IEN - 0898

HANDLING—Buckets, cans, funnels and other items of liquid-handling equipment are described by picture summaries in 4-page Bulletin 63. George D. Ellis & Sons Inc., 4040 N. American St., Dept. IEN, Philadelphia 40, Pa.

If you write maker identify as IEN - 0899

SPACE HEATING—Venturafin unit heaters for steam or hot water. Bulletin 7517, 48 pages, tells how to figure heating requirements, how to select a heater, how to locate, how to connect piping, wiring. American Blower Corp., 8109 Tireman Ave., Dept. IEN, Detroit 32, Mich.

If you write maker identify as IEN - 0900

HOSE—Neoprene-coated fabric is reinforced with spiral wire to make Flexnaust hose, 1¼ to 36 in. id., and Portovent portable duct, 3 to 36 in. id. Bulletin 40, 4 pages. Flexaust Co., 100 Park Ave., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 0901

HOSE—Glass fabric is combined with silicone to form flexible hose, duct, pipe for liquids and gases. File folder, "Actionflex", covers types, forms, properties. Orchard Industries, Dept. IEN, Hastings, Mich.

If you write maker identify as IEN - 0902

INDEXING*—Rotary table with 11-in. top is accurate to 6 sec. of arc through its 360-deg. travel. Operation is by handwheel. Bulletin RT-2, 8 pages. Moore Special Tool Co., 740 Union Ave., Dept. IEN, Bridgeport 7, Conn. *Your company letterhead required to obtain this literature.

If you write maker identify as IEN - 0903

VIBRATION ISOLATORS—Rubber member between two metal components is the basis for Silentbloc instrument and machinery mounts, bearings, bushings. Catalog 701, 12 pages. General Tire & Rubber Co., Dept. IEN, Wabash, Ind.

If you write maker identify as IEN - 0904

LABELS—Self-adhesive markers for pipe, conduit, containers, also warning signs. Stock sizes and wording in 8-page bulletin, "Speedy Marx". North Shore Nameplate Co., 43-01 Bell Blvd., Dept. IEN, Bayside, N. Y.

If you write maker identify as IEN - 0905

LATHE ATTACHMENTS—Collet attachments, steadyrests, turrets, bar feeds, coolant equipment, grinding attachments, dogs, tools, cutters, metric gears, motors, also drillpress attachments. Catalog 5418, 40 pages. South Bend Lathe Works, 301 E. Madison St., Dept. IEN, South Bend 22, Ind.

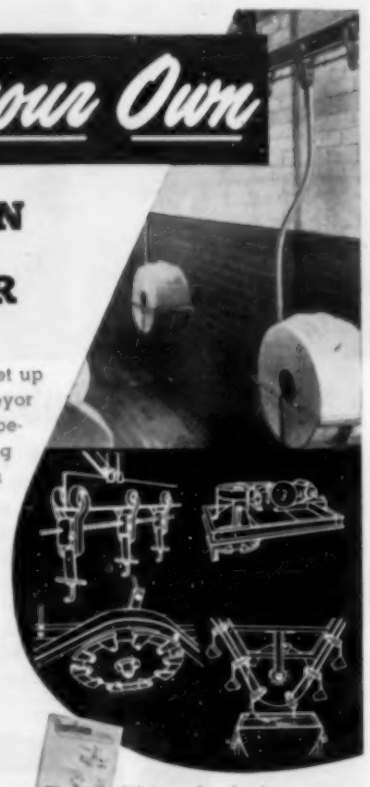
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11493

Make your Own

BUSCHMAN CABLE CONVEYOR SYSTEM

Now . . . your crew can set up an overhead cable conveyor system tailored to your specific requirements using pre-engineered Buschman standard components. Efficient Bush-Lock and Snub-Lock designs are available in ¼" and ⅜" sizes . . . lightweight, all-bolted construction . . . easily rearranged to meet changing needs.



Write today for literature

Buschman Conveyors — PRODUCE MORE FOR LESS — C-159 EWB

REPRESENTATIVES IN PRINCIPAL CITIES

THE E. W. BUSCHMAN COMPANY
4447 Clifton Avenue • Cincinnati 32, Ohio

If you write maker identify as IEN - 11494

—for "INSTRUMENT-QUALITY" AIR

IN COMPRESSED AIR OPERATIONS...

HERE'S YOUR ANSWER!

HANKISON
MODEL B-30-D
Condensifilter

Featuring the New-Economical DISPOSABLE FILTER CARTRIDGE

Dehydrate and filter ordinary plant air with a Hankison Model B-30-D Condensifilter for air of "Instrument-Quality." Condenser section removes moisture by lowering dew point of air to within 2 or 3 degrees of cooling water; low cost, disposable filter cartridge with 540 sq. in. of surface area removes even finest dirt particles. Capacity: 30 scfm at 100 psig.

Write for Bulletin B-30-D
For larger capacities, write for data on Model A-100.

HANKISON CORPORATION
350 BILTMORE BLDG. • 951 BANKSVILLE ROAD • PITTSBURGH 16, PA.

If you write maker identify as IEN - 11495

FROM *Turbo-Props* TO *Atomic Subs*

Precision

Unbreakable PISTON and SEALING RINGS Solve Problems as Advanced as Today's Engineering.

Your ring problems may not be as demanding as mentioned above . . . but here is piston and sealing ring know-how that can meet your most rugged requirements. PRECISION Unbreakable Rings are made from a variety of Super Alloys . . . Bronze, Stainless Steels, Stellite and others.

Whether your problems are turbo-prop engines, harnessing atomic power or more simple applications, PRECISION Piston Rings can help you.

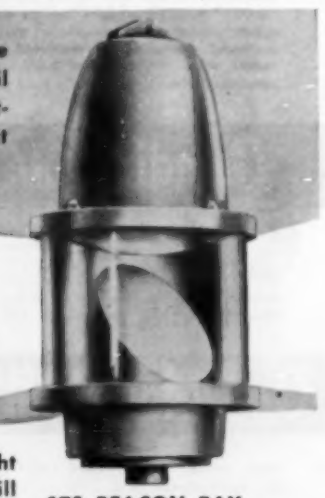
Write for our new bulletin.

PRECISION PISTON RINGS, INC.
of Indianapolis
1420 Commerce Avenue • Indianapolis 1, Indiana

If you write maker identify as IEN - 11496

Noise levels are no obstacle to this safety signal! Nail mills, boiler factories, shuttle rooms no longer present a signalling problem.

Forget NOISE!



275 BEACON RAY

The warning beam of light from this Beacon Ray will penetrate through any noise levels! Rotating through 360° this concentrated beam will reflect off any bright surface to warn the unwary even though they may be facing the other way.

With or without audible signals in service a Beacon Ray with its greater intensity and range will pinpoint the location of danger. An audible signal will fail to do this. Write for full details on the new low-cost Federal 275 Beacon Ray warning light.

FEDERAL SIGN and SIGNAL Corporation formerly: FEDERAL ENTERPRISES, Inc.
8745 SOUTH STATE STREET CHICAGO 19, ILLINOIS

If you write maker identify as IEN - 11497

EQUIPMENT LASTS LONGER
. . . PERFORMS BETTER . . .
when the

ARIDIFIER

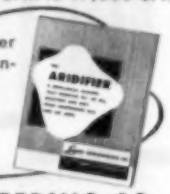
SCRUBS, CLEANS AND DRIES
On Air and Gas Lines

LASTS LONGER because . . .
The Aridifier's patented centrifugal-baffle action traps 92% of all dirt, oil, scale and water in gas or compressed air . . . and drains off these troublemakers *before* they can damage tools and equipment.

PERFORMS BETTER because . . .
The Aridifier protects tools against the freezing, fouling, caking and corrosion caused by dirt and foreign matter . . . assures the clean, dry air and gas that means better spray work, painting, lacquering, sand blasting, air cleaning, and similar operations.

Easily installed, the Aridifier maintains itself. 10 models. Capacity range; 7 CFM to 17,000 CFM.

Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.
Write for This Catalog Now!



Logan ENGINEERING CO.
4902 W. Lawrence Ave., Chicago 30, Ill.

If you write maker identify as IEN - 11498

NEWARK for ACCURACY

aluminum
brass
bronze
phosphor bronze
copper
monel
nichrome
gold
silver
nickel

Wire Cloth in All Malleable Metals

Newark Wire Cloth is made of *all* malleable metals such as aluminum, brass, bronze, phosphor bronze, copper, monel, Nichrome, nickel and stainless steel; as well as the noble metals such as gold, silver, platinum, etc.

This wide range of metals enables you to select the one wire cloth to meet your conditions of corrosion and/or contamination.

In all metals, Newark Wire Cloth is accurately woven in a wide range of meshes, ranging from very coarse (4 inch space cloth), to extremely fine (up to 400 mesh). Our reputation for 'Accuracy' through more than 75 years is your guarantee of wire cloth quality.

We maintain a large stock of popular sizes in the more commonly used metals and can make prompt shipment. Let us quote on your requirements.

Send for our New Catalog E.

Newark Wire Cloth COMPANY
351 VERONA AVENUE • NEWARK 4, NEW JERSEY

If you write maker identify as IEN - 11500

Printing - Spirit type duplicator for letter size sheets, motor driven

Source: A. B. DICK COMPANY
5700 W. Touhy Ave., Dept. IEN, Chicago 31, Ill.

Model 230

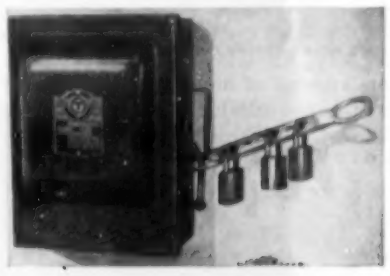
Azograph trade names a new short run duplicating process, suited for production of a maximum of 50 legible copies from a master. The process is characterized by chemically separating the two color forming compounds within the coating of the transfer sheet so these compounds cannot unite to form color until a third element, a reactant in the fluid, is introduced within the machine. It is impossible, as a result, for typists handling the masters or transfer sheets to be stained.

A master sheet is placed on top of a transfer sheet covered with a brown wax containing the color forming compounds. Pressure, by typewriter keys or pencil, transfers the coating deposit to the back of the master in reverse image. The master is then put into the duplicating machine, with the reverse image up, and blank paper is fed through. This paper is moistened by the colorless fluid and then comes in contact with the image on the master containing the two color forming components. The image develops in deep blue on the blank paper.

If you write maker identify as IEN - 11501

Lock - Multiple padlock unit to lock a circuit switch or fuse box

Source: INDUSTRIAL PRODUCTS CO.
2801 N. 4th St., Dept. IEN, Philadelphia 33, Pa.



Single units $1.20

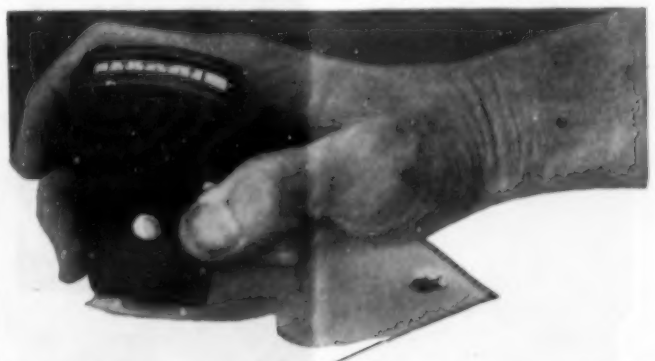
Corrosion proofed cold rolled steel is employed in the construction of this new slide type padlock unit. It is drilled to take a maximum of six padlocks. It applies on a circuit switch box, or a fuse box, to hold the operating handle in open position so the circuit can be worked on safely. The unit is particularly suited for use where a number of men are employed on a given job and it is unsafe to close the circuit until all have finished. The unit weighs 8 oz. and measures 8¼ in. in length.

If you write maker identify as IEN - 11502

Patents are pending on a new centrifugal switch for built-in assembly on fractional horsepower single phase motors. The switch combines starting duty and reversing action. It permits a motor to reverse its direction of rotation each time its starting circuit is closed, or when an unusual overload condition occurs. The switch disconnects the starting winding of the motor when rated speed is reached. The maker, In-Sink-Erator Mfg. Co., 1329 Clark St., Dept. IEN, Racine, Wis., will send you complete information.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11503



How thick is the coating?

Check with an ELCOMETER . . . new type thickness gauge for spot checks on non-magnetic coatings: porcelain enamel · paints · platings · foils · glass · paper · plastics · etc.

Accurate to ± 5% ± .0001".

For flat or curved surfaces in hard-to-get-at spots without loss of accuracy. Needle locking device assures a correct reading every time.

Comes with tough, leather case containing inner pocket for test strips.

Retail price ("A" Scale) $55.00 F. O. B. Cleveland, Ohio. Special scales available. Write for illustrated folder.

FERRO

FERRO CORPORATION
4156 E. 56TH STREET
CLEVELAND 5, OHIO

If you write maker identify as IEN - 11504

UNIVERSAL CHUCKS

save time . . .
save money . . .

- low first cost, due to simple design.
- wrap-around gripping action eliminates scored tool shanks.
- precision manufacturing assures tools running true.
- sizes from 1/16" to 1½", shanks to fit any type machine.

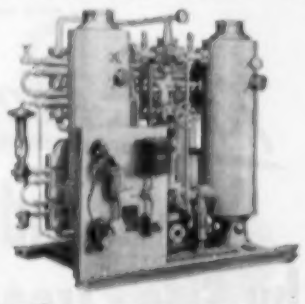
Standard Collet Chucks for a wide variety of applications.
Floating Chucks for reaming and tapping.
Coolant-Fed Chucks for deep hole drilling.

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

173-A

If you write maker identify as IEN - 11505

ELIMINATE MOISTURE PROBLEMS
with this Packaged Dehydration Unit



Pritchard HYDRYERS* have wide acceptance among critical buyers as the dependable quality unit for efficient drying of air or other gases in industrial, processing and laboratory installations.
Having pioneered the development of an efficient packaged dryer, Pritchard has the experience which assures you that a HYDRYER will meet your most exacting performance requirements. Standard packaged units reduce dew points to minus (-) 40° F. Custom-designed units can be furnished to meet extreme conditions or special requirements. For complete information, write for Pritchard's new HYDRYER bulletin 16.0.081.

**Registered Trade Name*

Industry's Partner for Progress

COOLING TOWERS
SPECIALIZED HEAT EXCHANGERS
GAS & AIR TREATING EQUIPMENT

J. F. Pritchard Co.
OF CALIFORNIA
A DIVISION OF J. F. PRITCHARD & CO.
Dept. 369, 210 West 10th Street
Kansas City 5, Mo.

Representatives in Principal Cities From Coast to Coast

If you write maker identify as IEN - 11506

WHEN THREADS HAVE TO BE *Right---*

Detroit thread plug and thread ring gages have long been noted for their high degree of accuracy and long life.

Now, in addition to accuracy and quality, Detroit Tap and Tool can make prompt delivery on Standard American National thread gages as well as on gages for Unified threads, American Standard pipe threads, Aeronautical pipe threads or Dryseal pipe threads.

Many special size thread ring and thread plug gages are also carried in stock for immediate shipment.

See your local Detroit Tap and Tool representative today. Ask for our complete Catalog-Price List (SG-53) covering standard thread gages.

DETROIT TAP & TOOL CO.
6615 E. EIGHT MILE RD. BALDWIN, MICHIGAN

If you write maker identify as IEN - 11507

UNIFORM QUALITY
DIVERSE
APPLICATIONS

Each part of every Curtis Universal Joint is made of specially selected steel, individually heat-treated for a specific purpose. This care in manufacture is reflected in our catalog torque and load ratings — which are substantiated by constant testing of production joints.

That's why Curtis Joints are the most dependable, durable and trouble-free available — the standard of the industry.

CURTIS UNIVERSAL JOINTS

- 14 sizes always in stock — bored or unbored hubs
- Fewer parts, simpler construction
- Complete equipment for government tests

PLUS — facilities and engineering skill to handle special specification jobs at any time.

Not sold through distributors. Write direct for free engineering data and price list.

Trade Mark **CURTIS**
UNIVERSAL JOINT CO., INC.
7 BIRNIE AVE., SPRINGFIELD, MASS.
As near to you as your telephone
A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 11508

Next Time

Job-Fit Industrial Tires by Size · Tread · Compound

For tops in traction, get Goodyear's even-wearing All-Weather Tread Industrial Solid, shown above.

All-Weather Tread

Smooth Solid

All-Service Tread Xtra Cushion

Rib All-Weather Pneumatic

Semi-Pneumatic Cushion

HERE's how to cure the headaches that come from using the wrong industrial tires. Call your Goodyear Dealer and let him specify the "right tire for the right job." Let him show you how to get top performance from your industrial tires by job-fitting them these three ways:

Right Size for your equipment. Goodyear has over 100 different solid tire types and sizes plus a full line of pneumatic and semi-pneumatic tires — America's most complete line of industrials.

Right Tread for your plant's floor surfaces. Smooth and Grooved for easy rolling. All-Service or the famous All-Weather, wherever traction is needed.

Right Compound for longer tire life. Goodyear offers you a choice of either UNiversal chip-resistant or Neoprene oil- and acid-resistant compound at no extra cost.

Make the first step towards industrial tire savings in your plant by calling your Goodyear Dealer today. Or write:
Goodyear, Industrial Tire Sales,
Akron 16, Ohio

USE THE RIGHT TIRE FOR THE RIGHT JOB—USE

GOODYEAR
INDUSTRIAL TIRES
All-Service, All-Weather, Xtra Cushion—T. M.'s
The Goodyear Tire & Rubber Company, Akron, Ohio

NEW LITERATURE—*Continued*

If you write maker identify as IEN - 0906

LUBRICATING—Advantages of automatic metered lubrication to machine bearings are stated in humorous manner by captioned cartoons in 24-page pocket Booklet, 34-22. Stewart-Warner Corp., Alemite Industrial Div., 1826 Diversey Parkway, Dept. IEN, Chicago 14, Ill.

If you write maker identify as IEN - 0907

MACHINE PARTS—Fixtures and tooling for machine tools to assist in automatic operation. Examples are shown in 8-page bulletin, "Advancing Automation". Swartz Tool Products Co., 13340 Foley St., Dept. IEN, Detroit 27, Mich.

If you write maker identify as IEN - 0908

MAGNETIC CORES—Permeron nickel-iron alloy in .001 and .002-in. ribbon is wound into core form. Production, standard sizes, illustrated case details, hysteresis loops in 12-page Bulletin 5204. I-T-E Circuit Breaker Co., 1924 Hamilton St., Dept. IEN, Philadelphia 30, Pa.

If you write maker identify as IEN - 0909

MICROSCOPES—How to select one is included as part of 28-page Catalog D-185 on Dynoptic laboratory microscopes and attachments. Bausch & Lomb Optical Co., 635 St. Paul St., Dept. IEN, Rochester 2, N. Y.

If you write maker identify as IEN - 0910

PACKINGS—Vix-Syn synthetic-rubber packings in V, U and O-ring types. Application suggestions and sizes in Bulletins 2-574, 2-576, 2-579, 16 pages total. E. F. Houghton & Co., 303 W. Lehigh, Dept. IEN, Philadelphia 33, Pa.

If you write maker identify as IEN - 0911

PERISCOPES—Remote viewing of dangerous locations by company's industrial periscopes, available in horizontal wall-mounted or vertical designs, is detailed in 4-page Bulletin 301. Kollmorgen Optical Corp., 347 King St., Dept. IEN, Northampton, Mass.

If you write maker identify as IEN - 0912

PIPE SWIVEL JOINTS—Ball-bearing design for service from vacuum to 6,000 lb. and for temperature to 750 deg. F. Sizes in 4-page Catalog FS-107. Emsco Mfg. Co., Box 2098, Dept. IEN, Los Angeles 54, Calif.

If you write maker identify as IEN - 0913

PLASTIC EXTRUSIONS—Rigid plastic shapes extruded by the yard for a variety of product applications from lighting fixtures to slide rules. Bulletin, 20 pages. Sheffield Plastics Inc., Dept. IEN, Sheffield, Mass.

If you write maker identify as IEN - 0914

PLASTIC FOAM—Granules of processed polystyrene are poured into a mold and heated to form a strong light plastic foam with closed cell structure and tough skin. Properties, methods and uses in 24-page "Expandable Polystyrene". Koppers Co., 1301 Koppers Bldg., Dept. IEN, Pittsburgh 19, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11510

Now . . . leakproof coupling by hand in Rego* GX welding torch

Now Rego tip and mixer can be tightly coupled to Rego GX Torch handle simply by a twist of the hands, thanks to new gas-tight neoprene seating rings. These tough, long-wearing gasket-type rings form a perfect seal. They take all the abuse. Dust and sand in air won't harm metal seating surfaces or break gas-tight seal. Eliminates costly periodic re-seating of torch heads, gives longer torch life. Rego KXA Cutting *Attachment* can similarly be attached with hand tightening.

*T.M. of the B. B. Co. Chicago

Branches and dealers from coast to coast

Copyright 1954, National Cylinder Gas Company

NCG® **National Cylinder Gas Company**
840 N. Michigan Ave., Chicago 11, Illinois

If you write maker identify as IEN - 11511

HOW TO PACKAGE SMALL ITEMS
Safely . . . with Visibility

LOOK INTO LUSTEROID PLASTIC VIALS and TUBES

There's a LUSTEROID plastic container just right for carrying items too small for ordinary packaging. These crystal clear vials and tubes are strong, tough, unbreakable. Save you money, too. No labels to affix because LUSTEROID is printable. Cuts handling and shipping expense because it's so light in weight. Wide choice of colors in clear or opaque in standard diameters from ¼" to 1½" and lengths up to 6". Cork, slip-on and screw-cap closures.

Write for samples and details today.

LUSTEROID CONTAINER COMPANY, INC.
10 West Parker Avenue, Maplewood, N. J.

If you write maker identify as IEN - 11512

ALL COMERS!

HERE'S THE CHAMP . . .
YOU SUPPLY THE CHALLENGER

The difficult fluid, gas, or air transmission problem in your plant—We'll send you a Snap-Tite Hi-Flow quick connect disconnect coupling—double or single shut-off or straight-thru—any size ⅛" to 3"—Test it! in your Plant, under actual working conditions—You be the judge—If it doesn't do a better job than the coupling you're now using — Or solve your problem—Ship it back collect! Fair enough? Write today on your letterhead, briefly outlining your problem—We'll ship immediately.

*Snap-Tite INC

S. WOODROW
UNION CITY, PENNA.

If you write maker identify as IEN - 11513

Let us show you how

SPEE-FLO

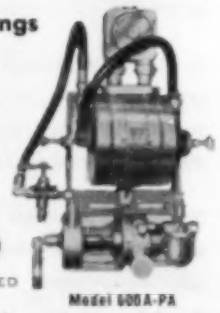
HOT SPRAY HEATERS

reduce production costs 25%* with material and labor savings

- Faster application—one coat instead of two!
- Sharply reduced overspray cuts material consumption.
- Viscosity reduced by heat permits lower atomizing pressures—smoother finish.
- Blushing, orange peel and sag eliminated.
- Improved build and holdout.
- All weather quality control.

**Let us prove it.*

UL APPROVED



Model 600A-PA

DON'T DELAY! MAIL IN COUPON TODAY!

THE SPEE-FLO CO., Dept. IEN-1, 722 Polk Avenue, Houston, Texas
Please send me information on your line of hot spray heaters best suited to our work. Type of products being finished_____
Application is conveyorized____ turntable____ mobile____ other____
Average volume of material per gun per hour_____
Type of material_____ Please have representative call_____
Name_____ Firm_____
Address_____
City_____ State_____

If you write maker identify as IEN - 11514

The Answer

To your metal turning cost problem may well be this 11" Logan Lathe

Brief Facts

Collet Capacity, 1"
Spindle Hole, 1⅛"
Swing over bed, 11⅛"
Center Distance, 24"
Bed Width, 6 15/16"
Ball Bearing Spindle
16 Spindle Speeds, 45 to 1500 rpm
Double V-belt Drive
Threads—48 selections, RH or LH—4 to 224 per inch

No. 1925—Quick Change Gear, 3-Drawer Cabinet Lathe, **$875.00** F.O.B. Chicago

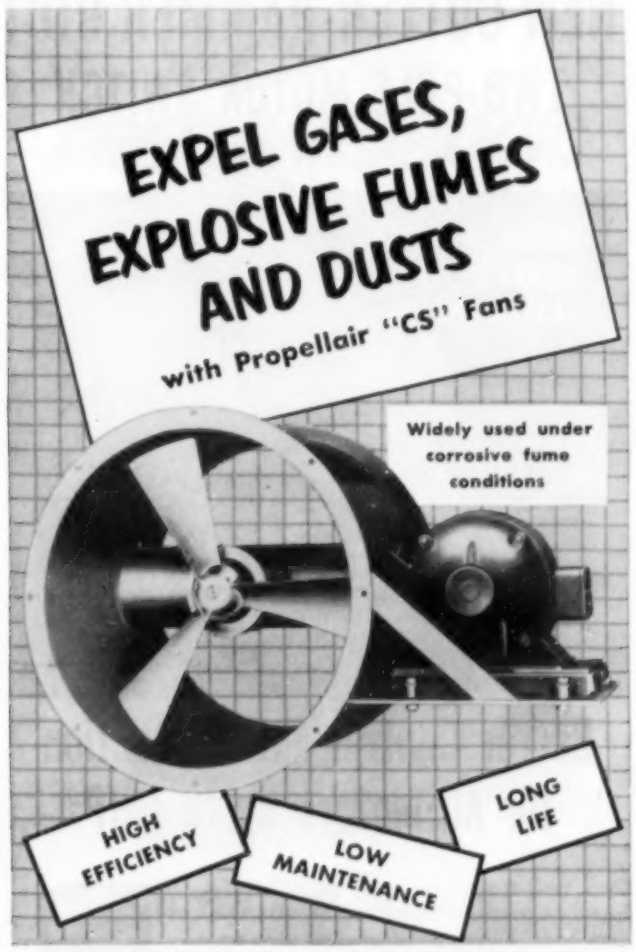
Sustained accuracy and low cost performance are built into the Logan No. 1925. With 1" collet capacity, 1⅜" bore, and 24" centers it takes pressure off costly-to-run, big lathes . . . with no difference in precision results. The ball bearing spindle needs no adjustment for any speed from 45 to 1500 rpm. The rugged, balanced special alloy bed has two V-ways and two flat ways precision ground. The automatic apron, double-walled and friction-free, with spline-driven power cross feed, has a convenient, lever-operated, disc type clutch. V-belt drive transmits maximum power to the headstock. You will find the 1925 equally effective in production, shop and toolroom.

Write for the Logan Lathe Catalog—9", 10", 11" and 12" Lathes and 8" Shapers.

Logan ENGINEERING CO.
Lawrence and Lamon Ave., Chicago 30, Ill.

LOOK TO FOR BETTER LATHES AND SHAPERS

If you write maker identify as IEN - 11515



■ **Propellair** "CS" Fans are rugged, heavy-duty units for duct installation. The cast aluminum alloy airfoil propeller is housed in a welded heavy-gauge steel duct section and belt guard with internal bearing assembly.

Robbins & Myers *All-Weather Motor* located outside airstream. Sizes 20" to 60", with certified air deliveries of 3750 to 85,000 c.f.m. Available with corrosion and abrasion-resisting finishes and with ventilated bearings suitable for operation in high temperatures.

Simplified Installation
Propellair "CS" Fans are built to fit standard duct sizes without the need of elbows. The fan drum has front and rear flanges drilled for easy mounting into duct system.

Our engineers are at your service for fan selection and application advice. Write for Bulletin 650-E.

PROPELLAIR®
DIVISION OF ROBBINS & MYERS, INC.
SPRINGFIELD · OHIO

If you write maker identify as IEN - 11517

Valve - Brass body and stem for low pressure duty, ⅜ to ¾ inch

Source: NORTHERN INDIANA BRASS CO.
935 Plum St., Dept. IEN, Elkhart, Ind.

Catalog Supplement NVC-1

Illustrated are two of four designs that have been added to the company's Nibco valve line. To the upper left is a new boiler drain assembly No. 74 with an integral pipe threaded inlet and integral threaded hose connecting outlet. This valve employs a neoprene disc, a threaded stem that provides full opening in 1½ turns and an aluminum hand wheel. The valve is made in two sizes at ½ and ¾ inch.

To the lower right is a new No. 70 Silcock valve with a neoprene disc held in place by a stainless steel screw. It is internally threaded at the inlet and carries external hose threads at the outlet. Two sizes are ½ and ¾ inch. This valve can be specified plain or with a lock-shield.

The line includes a No. 581 oil tank valve in ⅜, ½ and ¾-in. inlet sizes with an outlet that carries a tube fitting to take ¼ or ⅜-in. copper tube. Also included is a No. 760 Silcock with a ½ or ¾-in. inlet for sweat connection to a copper tube fitting and with a threaded hose connection in the same two sizes at the outlet.

If you write maker identify as IEN - 11518

Conveying - Movement control for products converging to one line

Source: STANDARD CONVEYOR CO.
64 Indiana Ave., Dept. IEN, North St. Paul 9, Minn.

Bulletin 54

E-Z-Merger is a new rotary device that assembles on a vertical axis between two converging conveyor lines to present arms extending across the two lines before they become one. Prior contact, between a load and the arm on either side, clears that load and locks the other arm so the initially contacted load can proceed and the other is held back until the line is clear.

Arm position can be adjusted in the field. Application can be made on parallel conveyor lines and on various converging angle assemblies employing belts, live rollers or gravity sections. Products weighing 2 lb. or more can be handled. An adjusting device sets tension for a given weight.

The moving parts are mounted on ball bearings and wearing surfaces are hardened. The assembly can be removed from its vertical mounting. Required space is about 10 in. in diameter by about 4 in. in height. The two arms travel in an arc of about 90 degrees. Either arm movement will always take preference over the other.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11519

PENFLEX
"give-and-take"
prevents blow-outs on blow-offs

Penflex Galvanized Steel Interlocked Tubing (8" I.D.), flanged at both ends. Installed as expansion joints on safety blow-off valves, they take up to 850 psi steam pressure at 900°F.

Power plant applications like this one can't use less than Penflex Metal Tubing offers in flexibility, strength, and tightness. When safety valves go, expansion joints must hold. Penflex joints do. That's because they can give with the pressure and take it, too.

Thermal expansion at 900°F. . . . pressures up to 850 psi . . . impact and pipe movement under these strains—all are safely handled by Penflex. Forty-two complete units in this big power plant are protected from blow-outs by Penflex.

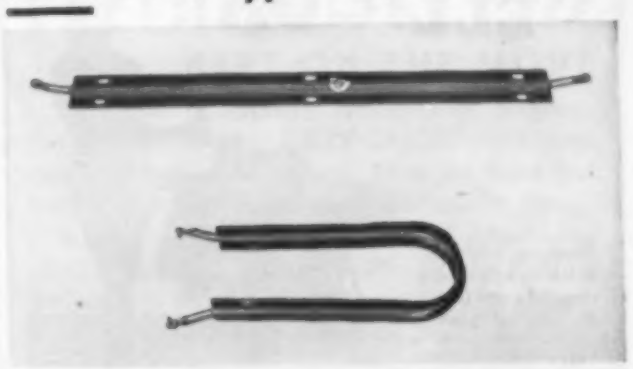
There are hundreds of other applications in the steam and diesel power fields for Penflex Interlocked Tubing and Penflexweld High-pressure Tubing. Call in the Penflex engineer to help you on your own particular problems. In the meantime, write for "Flexineering," your guide in buying and using Penflex Flexible Metal Tubing. There is no charge or obligation.

Pennsylvania Flexible Metallic Tubing Co., Inc.
7200 Powers Lane, Phila. 42, Pa.

PENFLEX
COMBINES FLEXIBILITY WITH DURABILITY

If you write maker identify as IEN - 11520

New Vane-type Calrod* Heater



For heating flat and circular surfaces

The G-E Vane-type Calrod heater is *formable* and can be cupped for heating circular surfaces.

The sturdy Calrod unit in this heater is bonded to a wide 1¾-inch radiating surface and is available in lengths from 20 to 100 inches. Fast, even heat transfer to the vane is provided by a strong, copper-brazed joint which runs the full length of the heater.

FREE APPLICATION BULLETIN

G.E. offers a new "Handy Selector Guide for Surface Heating." For your copy write today for GEA-6146, Section 720-140, General Electric Company, Schenectady 5, N. Y.

*Reg. Trade-mark of the General Electric Company

GENERAL ELECTRIC

If you write maker identify as IEN - 11521

CALDWELL
Adjust-A-Leg
EQUALIZING and LOCKING
SLING

WRITE FOR LITERATURE

With an ADJUST-A-LEG Equalizing Sling, unbalanced and "hard to get hold of" loads may be handled as easily as simple loads. As the tension of the lift comes on, the legs automatically adjust themselves to proper lengths and *frictionally lock in position.* The load is raised level . . . with *no* fuss, *no* bother, *no* figuring — the Sling does it! Sizes ¼-ton to 50-ton.

THE CALDWELL COMPANY, INC., 3413 AUBURN ST., ROCKFORD, ILL.

If you write maker identify as IEN - 11522

Contains specifications, dimension diagrams and descriptions of Cords complete line of cord sets with "fixed grounding pin" molded caps. Both straight and right angle . . . 15 Ampere-125 Volt and 15 Ampere-250 Volt. Wire gauge sizes from 18 ga. 3 cond. Type SJ to 12 ga. 3 cond. Type S.

CORDS LIMITED
DIVISION ESSEX WIRE CORPORATION
121 DODGE STREET, DEKALB, ILLINOIS

If you write maker identify as **IEN - 11523**

"ELL"-OH!!

Eliminate cumbersome expensive threading and fabrication of pipe assemblies with "ELLS." It is now possible to bend 1" pipe and have only 1" of tangent on one end. The ell shown is 1" pipe, bent to a 2½" radius. Production machines with automatic duplicate bending relays are available up to and including 6" extra heavy pipe. The machine shown is the model "A-6" which has a bending capacity of 2" extra heavy pipe. Smaller and larger machines are available. The same machine can be used for bending tubes, structural shapes, reinforcing bars, etc., by merely changing the die.

Write for Descriptive Folder. Dept. 7

Prices start as low as $1575.00

(Motor and all Electrical Equipment included)

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St. Philadelphia 40, Pa.

If you write maker identify as **IEN - 11524**

B.F.Goodrich

TW ANALYSIS helps forge plant increase industrial tire service over 500%

THE maintenance men of a large Cleveland forge plant had a real problem on their hands. Industrial tires in heavy-duty service were "falling apart" under heavy loads after only 500 hours.

The local B. F. Goodrich man made a Tire and Wheel Analysis. As a result of his findings, new Deluxe Cushion Pressed-On tires with an oil-resisting compound were placed on a truck in regular service. Most of the trucks in this type of service have since been equipped with B. F. Goodrich oil-resisting-compound tires. Service hours have been increased more than 500%!

Pressed-On Deluxe Cushion tires are available with non-directional traction tread and in some sizes with smooth tread . . . and are made in a variety of compounds to meet any type of service condition. A special process that bonds the tread to the steel base assures positive adhesion of tread for life of the tire.

TW ANALYSIS CAN SAVE YOU MONEY

Just contact your local B. F. Goodrich retailer or mail the coupon below. Without cost or obligation, a trained B. F. Goodrich man will study your materials handling operations and make recommendations that can cut your industrial tire costs . . . reduce maintenance expense. The advice you receive will be unbiased for B. F. Goodrich makes a *complete* line of industrial tires for every type of service. A special TW Analysis is available for manufacturers of industrial equipment.

Here's a close-up of the front tire on the truck pictured above. 2688 hours of service and still rolling!

The B. F. Goodrich Company
Tire & Equipment Division
Department TW-420, Akron 18, Ohio

Please send me:
- ☐ Additional information on your Tire and Wheel Analysis Plan
- ☐ Free copy of "Industrial Tire Guidebook"
- ☐ Free copy of "How to Get Extra Service out of Solid Industrial Tires"

Name_____
Company_____
Street_____
City_____ Zone____ State____

Specify B. F. Goodrich tires when ordering new equipment

B.F.Goodrich — Research keeps first in rubber

NEW LITERATURE —*Continued*

If you write maker identify as **IEN - 0915**

PLASTIC MATERIALS—Epoxy resins for tooling, casting, laminating, potting, embedding and adhesive uses. Technical bulletins 1, 2 and 3, 6 pages each, give details on three materials in company's C-8 resin line. Bakelite Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 0916**

PLASTIC MATERIALS—Phenolic resins for casting, coating, bonding, foaming, laminating, sealing and impregnating. File folder, "Data File", and information sheets are issued to keep you up to date on developments. Marblette Corp., 37-21 Thirtieth St., Dept. IEN, Long Island City 1, N. Y.

If you write maker identify as **IEN - 0917**

PLASTIC MOLDING PRESS—Reinforced plastics, using glass fiber, are intended application for company's hydraulic molding press. Three sizes are 100 to 200 ton. Molding steps are pictured in 8-page Bulletin 5404. Hydraulic Press Mfg. Co., Marion Road, Dept. IEN, Mount Gilead, Ohio

If you write maker identify as **IEN - 0918**

POWER PRESSES—Straight-side single-crank presses rate 50 to 400 ton in company's Type S-1 design. Catalog 9-D, 20 pages, reviews construction points, includes a dimension table and specifications. E. W. Bliss Co., 1375 Raff Road S W, Dept. IEN, Canton 10, Ohio

If you write maker identify as **IEN - 0919**

PRINTING MATERIALS—Sensitized paper and cloth for dry-developed, moist-developed, blue print, sepia tone, duplicate master service. Sizes, speeds, eradicators in 8-page "Sensitized Products" bulletin. Frederick Post Co., 3650 N. Avondale Ave., Dept. IEN, Chicago 18, Ill.

If you write maker identify as **IEN - 0920**

PROTECTING—Rupture discs protect equipment or process lines from sudden pressure buildup. Looseleaf catalog, 12 sheets, describes applications, selection points, special problems, installation. Frangible Discs Inc., 57 Railroad Ave., Dept. IEN, Penns Grove, N. J.

If you write maker identify as **IEN - 0921**

PUMPS—Catalog 1-54, 108 pages, deals with centrifugal, rotary, reciprocating, turbine pumps and a line of accessories. Pipe friction, weight and volume tables are included. Deming Co., 186 Broadway, Dept. IEN, Salem, Ohio

If you write maker identify as **IEN - 0922**

CENTRIFUGAL PUMP—Rubber-lined pump handles solids to ⅛ in. at 10 to 3,000 gpm. at heads through 140 feet. Bulletin 52-B-8156, 6 pages. Allis-Chalmers Mfg. Co., 909 S. 70th St., Dept. IEN, Milwaukee 14, Wis.

If you write maker identify as **IEN - 0923**

CENTRIFUGAL PUMP—Corrosion-resistant design to handle acids, alkaline liquids, slurries and other process fluids. Capacity charts in 8-page Bulletin 725-4. Goulds Pumps, Inc., 301 Falls St., Dept. IEN, Seneca Falls, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 11526**

make it STRONGER
do it FASTER
with

Attaching copper lead wires is only one example of the many applications where Raytheon Weldpower Units eliminate slow, less satisfactory methods.

Let us show you how Raytheon Weldpower can improve production of small parts involving assembly of ferrous, non-ferrous or dissimilar metals. Send samples and details . . . or write for complete information. Address Dept. 6120 IN.

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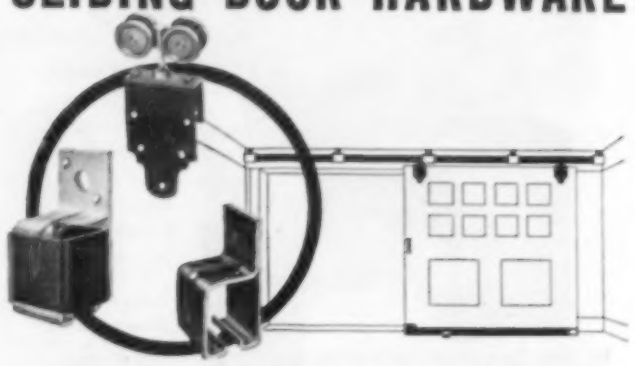
If you write maker identify as **IEN - 11527**

COBURN SLIDING DOOR HARDWARE



For All Industrial Door Installations

- ***Door hangers, brackets and track for doors weighing up to 1500 lbs.; up to 3 inches thick.***
- ***Straight and curved track in standard lengths of 6, 8 and 10 feet.***

For information write to Sales & Engineering, 56 Sterling Street, Clinton, Mass.; or see your classified telephone directory.

2685

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION CF&I

If you write maker identify as **IEN - 11528**

NEW CUTLER-HAMMER 9101 TWO-POLE MOTOR SWITCH

Better Control and Protection for All Motors up to 1 HP

Check these features and know the difference: Twin-break solid silver contacts; quick make and quick break. All mechanical operating parts are stainless steel. Famous Cutler-Hammer Eutectic Type thermal overload protection. Free-tripping; contacts cannot be held closed. Resets when switch is thrown to off position. Motor load sensing coils are fully enclosed but front removable; available for 10% loading increments.

Easiest to install and wire; removing wrap-around cover exposes mechanism completely, at front and both sides. Cover secured by single self-retained screw which cannot drop out and become lost. No annoying loose insulating baffle. Straight-through wiring; line terminals at top and load terminals at bottom . . . all clearly marked. Switch mechanism so compact it can be used in ordinary wall switch outlet box with standard toggle switch plate. Ideal for flush mounting on wall, panel or in machine cavity. Your Authorized Cutler-Hammer Distributor stocks both single pole and two-pole models of the new C-H 9101 Motor Switch. Order today and see the difference. CUTLER-HAMMER, Inc., 1378 St. Paul Ave., Milwaukee 1, Wisconsin. Associate: Canadian Cutler-Hammer, Ltd., Toronto.

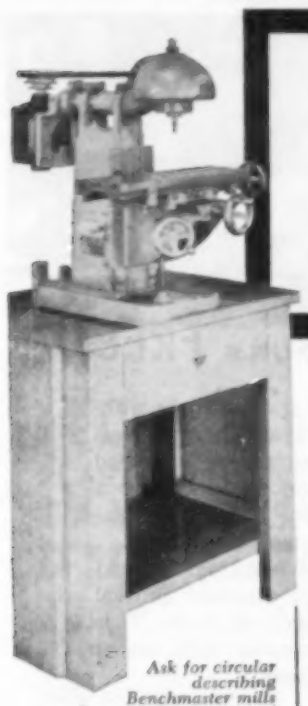
EASY TO WIRE
Removing wrap-around cover opens switch at front and both sides.

OPEN TYPE 9101
Ideal for flush mounting on wall, on any panel or in a machine cavity.

CUTLER-HAMMER

CUTLER-HAMMER MOTOR CONTROL C-H

If you write maker identify as IEN - 11530



benchmaster the *preferred* mill for small jobs!

4 models: vertical, horizontal, two production types.

Benchmaster is popular in every shop because it's a *real* time and money saver . . . takes *big, heavy cuts* for rapid metal removal, *mills vertically or horizontally* simply by substituting spindle assemblies, is *fast and easy on set-ups, saves thousands of dollars* over big-mill investments!

For small jobs you just can't beat a Benchmaster . . . low initial cost, high precision, power and extreme versatility make this the best dollar investment in your shop!

Ask for circular describing Benchmaster mills and numerous accessories!

Benchmaster Manufacturing Co.
1835 W. Rosecrans Avenue, Gardena, Calif.

benchmaster

World's largest manufacturer of small punch presses and mills.

If you write maker identify as IEN - 11531

Send for this

FREE HANDBOOK

It will help you plan MONEY-SAVING Electric Power Layouts

Uptegraff announces a new series of Liquid Filled Load Center Transformers, in eighteen ratings, from 150 to 2500 KVA, 3-phase. Designs are based upon extensive experience with this type of transformer, and represent modern engineering and manufacturing practice.

To simplify the selection and arrangement of auxiliary equipment, we have prepared a unique brochure, with which you can readily determine overall dimensions, total weights and other information for any combination of the Basic Transformer Unit with various types of switches and accessories. A check system permits the easy and accurate locating of desired data pertaining to various arrangements of properly rated equipment for any selected basic unit.

SEND for a free copy of this 20-page data book, giving important and useful information on Uptegraff Load Center Transformers.

R. E. Uptegraff Manufacturing Co.
Scottdale, Pennsylvania

If you write maker identify as IEN - 11533

Welding - Convertible torch and accessories to cut and weld

Source: LINDE AIR PRODUCTS CO
30 E. 42nd St., Dept. IEN, New York 17, N. Y.

For general utility

All-in-one designates a new oxy-acetylene torch and accessories for cutting operations to ⅜ in. in steel and for welding to $\frac{1}{16}$ inch. The torch also can be employed to heat for bending, brazing, soldering. Equipment, in addition to the torch, includes a cutting tip, 3 welding tips, oxygen and acetylene pressure regulators, fitted double hose, a friction lighter, goggles and a wrench.

Torch weight is 17 ounces. Overall length is about 13 inches. The oxygen and acetylene regulators weigh about 2 lb. each. Additional tips can be specified for welding capacity to ⅜ in. and for cutting to 2 inches.

If you write maker identify as IEN - 11534

Engine - Single cylinder gasoline, 3.6 hp., for low power take off speed

Source: KOHLER COMPANY
1230 High St., Dept. IEN, Kohler, Wis.

A standard design

Type K90R designates this new assembly of the company's standard single cylinder air cooled 3,600-rpm. engine, previously described IEN-3595-52. The new unit is characterized by the reduction gear assembly mounted on its output shaft. The gearing provides a 6 to 1 ratio for applications requiring low power take-off speed.

The engine weighs 52 pounds. It mounts a ball bearing crankshaft, externally mounted breaker points in a dust and moisture proof assembly, high voltage crankshaft mounted magneto, flyball governor, fuel strainer, air cleaner. The reduction gearing was an optional feature at the time when the engine was first described.

If you write maker identify as IEN - 11535

The contour machining duplicator, originally manufactured by Lodge & Shipley, has been taken over by Tracer Control Co., 595 E. 10 Mile Road, Dept. IEN, Hazel Park, Mich., and has been named the Duplimatic. The electrically controlled hydraulically operated unit attaches to practically any machine tool and controls movements of the machine automatically. It is available in three models to control 1, 2 or 3 feeds. It can be transferred from one machine to another. Set-up and dismounting take only a few minutes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11536

A PAID NEWS ADVERTISEMENT BY THE CARBORUNDUM CO.

NEW DEPRESSED CENTER WHEELS

reduce cost of roughing, weld grinding cutting off and slotting

Fast, safe grinding at low cost on the roughest jobs—that sums up the story of new CARBOFLEX Depressed Center Wheels by CARBORUNDUM. Some typical applications where this strong, reinforced wheel has proved its superiority include: undercutting and reducing heavy welds, roughing off fins and sharp edges, notching and cutting off gates and risers, removing surface defects, and general purpose roughing, slotting and cutting off.

The CARBOFLEX Wheel is an entirely new and effective combination of tough, top-quality abrasive grain and a strong, reinforced bond. The result is a depressed center wheel with extra-high cutting ability plus extremely high strength and resistance to cracking. Tests prove that too much reinforcing material lowers cutting effectiveness—too little is unsafe. CARBOFLEX Depressed Center Wheels achieve the most effective balance ...with enough reinforcement to hold the wheel together at recommended operating speeds even should it inadvertently become cracked...yet without sacrificing cutting ability.

An exclusive feature of the CARBOFLEX Wheel is the knurled back, which permits the operator to cut with both sides and the edge with no initial dressing.

Try CARBOFLEX Depressed Center Wheels on your toughest jobs. Call our Distributor or Salesman, listed in the yellow pages under "Abrasives" or "Grinding Wheels." Or, if you prefer, use the inquiry form provided by this publication—or write Dept. IEN 81-42, **The Carborundum Company,** Niagara Falls, New York.

"Carborundum" and "Carboflex" are registered trademarks of The Carborundum Company, Niagara Falls, New York

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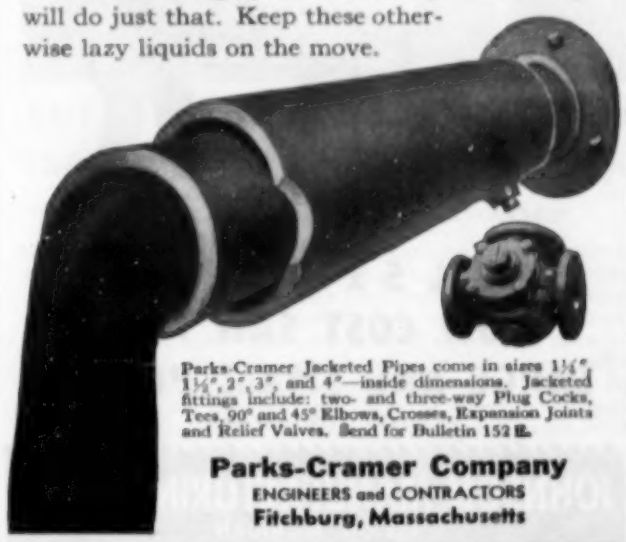
If you write maker identify as IEN - 11537

LAZY LIQUIDS
KEPT ON THE MOVE

Maybe it is Asphalt, Rosin, Wax, Sulphur, Syrup or some other LAZY Liquid. Heat them and they flow more readily. Heat the pipes that convey them also—and they continue to flow.

Steam, Hot Water, Hot Oil, or Dowtherm circulated through Jacketed Piping and Fittings will do just that. Keep these otherwise lazy liquids on the move.



Parks-Cramer Jacketed Pipes come in sizes 1¼", 1½", 2", 3", and 4"—inside dimensions. Jacketed fittings include: two- and three-way Plug Cocks, Tees, 90° and 45° Elbows, Crosses, Expansion Joints and Relief Valves. Send for Bulletin 152 B.

Parks-Cramer Company
ENGINEERS and CONTRACTORS
Fitchburg, Massachusetts

If you write maker identify as IEN - 11538

WHITNEY-JENSEN
METAL WORKING TOOLS
FOR 43 YEARS

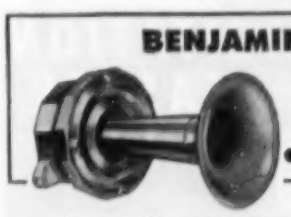
A lightweight tool that has found wide acceptance because it is durable, powerful, easy-to-use. The No. 5 Jr. has an adjustable locating stop clearly graduated to permit quick setting to any throat depth up to 2". Furnished complete with seven punches and dies in strong metal carrying case. Capacity, ¼" hole through 16 ga. mild steel. Overall length, 8¼"; height of gap, ¼"; weight, 2¾ lbs.

Write for our latest catalog.

WHITNEY METAL TOOL CO.
200 FORBES STREET • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 11539

BENJAMIN SIGNALING EQUIPMENT ...via Graybar



Among the more than 100,000 electrical items distributed by Graybar is the complete line of Benjamin Signaling Equipment—Howlers, Buzzers, and Sirens, all built to meet the most severe service demands. And, you can get the help of an experienced Graybar Signaling Specialist in planning the system best suited to your needs.

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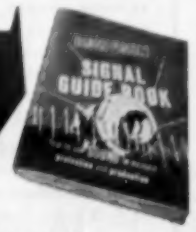

Here's one of the most complete books on sound signals ever published. Fully covers: fundamentals of sound—loudness, intensity, pitch . . . selection of signal equipment for any specific purpose . . . how to plan a complete sound signal system . . . descriptions and specifications of Benjamin Signaling Equipment. Send for your free copy, today. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 411-1210

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as IEN-11540

TODAY'S BEST BUY!

MODEL B
5" x 10" Capacity

A FULL 5 x 10 CAPACITY LOW COST SAW FOR LARGE AND SMALL PLANTS

WRITE FOR DETAILS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN-11541

...Give fragile products the Kid Glove touch

with new Colson® Pneumatic Casters

These new plate type casters with 8" or 10" pneumatic or 6", 8" or 10" semi-pneumatic tires are ideal for cushioning the ride over rough, bumpy floors.

All steel parts are 3/16" thick; heat-treated kingpin is 7/8" diameter; heavy duty double ball bearing swivel construction. Rigid and swivel fork models available

Write us or consult the yellow pages (under "casters") for the COLSON office near you.

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS • HAND TRUCKS • LIFT JACK SYSTEMS
Hydraulic, Electric and Mechanical Power Lifts and Transports

If you write maker identify as IEN-11542

POWERFUL AGITATION Cleans Parts FASTER BETTER

TURBO BLAST

CLEANING MACHINES

Impeller creates tremendous force to remove grease, oil, carbon, sludge, dirt. No limit to applications. Saves 1/3 to 1/2 on time and cost over other methods.

Model JR 20
(20 gallon capacity)
List price
$214.50
Less gun and basket
OTHER MODELS UP TO 50,000 GALLON CAPACITY

STORM-VULCAN, INC.
2225 BURBANK DALLAS, TEXAS

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Please send me Turbo-Blast information.
Name
Firm
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NEW LITERATURE—Continued

If you write maker identify as IEN-0924

HYDRAULIC PUMPS—Pressures are to 5,000 lb., also fluid motors, operating valves, pressure controls. Bulletin 146-B, 4 pages, is a summary with references to detail literature available. Denison Engineering Co., 1160 Dublin Road, Dept. IEN, Columbus 16, Ohio

If you write maker identify as IEN-0925

PYROMETER SUPPLIES—Thermocouples in base and noble metals, protection tubes, connectors, extension wires. Bulletin 4181, 36 pages, also gives temperature-millivolt curves, conversion tables. Illinois Testing Laboratories Inc., 420 N. La Salle St., Dept. IEN, Chicago 10, Ill.

If you write maker identify as IEN-0926

RECTIFIERS—Selenium rectifiers for electronic use are offered in standard and plug-in types. Ratings, characteristics, and a list of types for radio and TV use are given in 24-page "Replacement Guide". Sarkes Tarzian Inc., 415 N. College Ave., Dept. IEN, Bloomington, Ind.

If you write maker identify as IEN-0927

SPEED REDUCERS—Cone-Drive design employs double-enveloping gear construction for compact units. Bulletin 785-54, 4 pages, suggests use of standardized reducers, gear sets and components. Michigan Tool Co., 7171 E. McNichols Road, Dept. IEN, Detroit 12, Mich.

If you write maker identify as IEN-0928

ROCK DRILLING—Carbide-tipped rotary core drill bit in sizes from 7/8 to 6 in., also carbide-tipped hammer core bits to 5/8 inch. Bulletin, 4 pages. Tilden Tool Mfg. Co., 209 Los Molinos Ave., Dept. IEN, San Clemente, Calif.

If you write maker identify as IEN-0929

SIGNALING—Ultrasonic burglar alarm detects any motion in a protected space. How it works, using sound waves at 19.2 kc., is shown by diagrams and described by text in 12-page "Ultrasonic Alarms". Walter Kidde & Co., 675 Main St., Dept. IEN, Belleville 9, N. J.

If you write maker identify as IEN-0930

SIGNALING—Remote panel monitors several thermocouples, signals when temperature exceeds a preset limit. The temperature can be from minus 320 deg. F. to plus 3,000 deg. F. Bulletin 70, 4 sheets. Thermo Electric Co., Saddle River Township, Rochelle Park Post Office, N. J.

If you write maker identify as IEN-0931

SOLDERING—Pencil-type soldering iron with interchangeable tips rates 47½ watts. Temperature range is 650 to 1,000 deg. F. Standard units and instructions on tip care in 4-page "Pencil Soldering Iron". Ungar Electric Tools, Inc., Box 312, Dept. IEN, Venice, Calif.

If you write maker identify as IEN-0932

STEEL—Machineability is a feature of Ledloy free-cutting steel. Bulletin 11-1, 8 pages, quotes production figures on parts made from it. Joseph T. Ryerson & Son Inc., Box 8000-A, Dept. IEN, Chicago 80, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11543

BREEZE Job-Engineered BELLOWS

ANOTHER BREEZE CORP. PRODUCT

...Give LASTING PROTECTION Where Ordinary Bellows Fail

Breeze welded diaphragm bellows meet the operating life cycle of any equipment in which they are used *because every Breeze bellows design is individually engineered and built for the job.*

Breeze has no "stock bellows," but if you have a vibration problem in ducts, large or small, or want permanently sealed valve enclosures in any type of piping system, or need bellows for torque transmission or other uses, Breeze experience can quickly provide the answer . . . and production can meet your requirements.

A Breeze bellows is dependable because each diaphragm is designed to work well within its elastic limit. This is accomplished by thorough analysis of each application and careful design of the bellows to withstand all requirements. "Job engineering" each individual type eliminates makeshifts, assures efficient performance.

Breeze bellows are made in stainless steel, inconel, monel, nickel, steel, or other weldable alloys.

Feel free to consult us without obligation on your existing bellows requirements, or any other project where reliable welded diaphragm type bellows might solve a design problem.

BREEZE CORPORATIONS, INC.
700 Liberty Ave., Union, N. J.

OTHER BREEZE PRODUCTS: ACTUATORS • RADIO SHIELDING • AERO-SEAL HOSE CLAMPS

If you write maker identify as IEN-11544

THE DIES ARE YOURS FREE!

Yes, we do hundreds of stamping jobs without making special tools—and there's a good reason for this. In stamping out laminated shims for over forty years, we've developed much special equipment and tooling unknown in the average stampings house . . . including an arsenal of blanking dies and punches . . . and we've acquired unusual production techniques and skills. This equipment and these special skills are at your service without charge.

For full information, send for our free 12-page booklet "Service In Stampings." And next time you need stampings, why not let us bid—and discover the savings we offer you!

LAMINATED SHIM COMPANY, INC.
STAMPINGS DIVISION
"ONE PIECE OR ONE MILLION"
2110 UNION STREET • GLENBROOK, CONNECTICUT

If you write maker identify as IEN-11545

Here's how to get the most for your floor dollar...

Write to the Flash-Stone Company 3723 Pulaski Avenue, Philadelphia 44, Pennsylvania, for the new analysis of initial floor costs compared to years of service. Covers four flooring materials.

If you write maker identify as IEN-11546

...for triangular, round & square carbide inserts

Newcomer Econo-Clamp Tool Holders provide a short-cut to economical production . . . machine down-time for tool grinding is minimized because multiple cutting edges on inserts can be utilized! Positive dual clamping features provide easy, quick and accurate indexing.

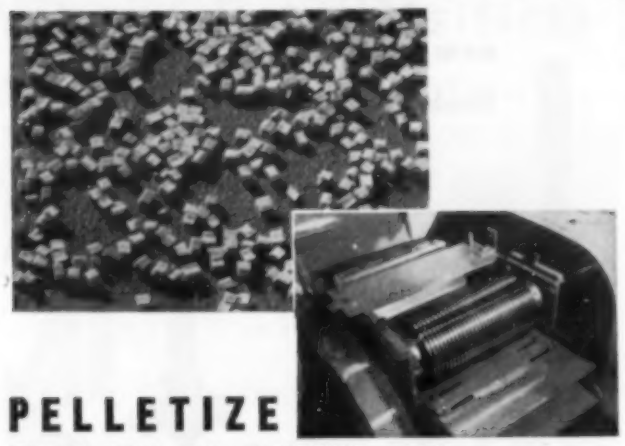
Econo-Clamps use standard full-length inserts or the more economical, short Newcomer "Throway" Carbide Inserts together with a hardened steel base anvil.

Newcomer Ad-Clamp Tool Holders are also available for use with standard rectangular blanks or the more durable Newcomer Step-Tip Blanks.

Send today for Newcomer Catalog 109-541

NEWCOMER PRODUCTS, INC.
LATROBE, PENNSYLVANIA
General Sales Office: 512 Franklin Ave., Pittsburgh 21, Pa.

If you write maker identify as IEN - 11547



PELLETIZE
PLASTICS OR RUBBER with
TAYLOR-STILES
DICING CUTTER

In a single straight-line operation this dicing cutter slits and cross-cuts sheets of stock into uniform pieces for further processing.

Write for folder describing this and other Taylor-Stiles cutters for cutting various types of plastics and rubber.

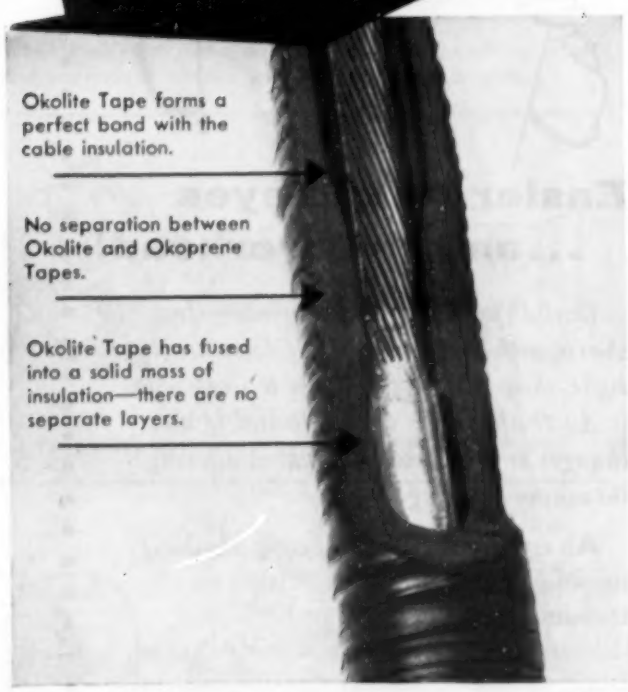
—without fines
—without dust
—without longs

TAYLOR-STILES and Company
CUTTING MACHINES & KNIVES

44 Bridge Street
Riegelsville, New Jersey

If you write maker identify as IEN - 11548

Perfect bond, no voids, no separate layers with
OKONITE RUBBER SPLICING TAPES



Unretouched photo of cutaway splice.

On this 5-kv unshielded cable you can see the elements that make up a long-lasting splice—one that is "Spliced for Life." Okolite High Voltage Tape, applied over the conductor, has fused into a solid, uniform layer of insulation. Ozone-resistant and moisture-resistant, Okolite Tape has a high dielectric strength, high insulation resistance and excellent aging properties.

The Okoprene Tape, replacing the sheath, supplies the same tough weather, oil, acid, and heat resistance given by the neoprene sheath. Write for a set of instruction sheets IE-5678 for information on better splicing techniques. The Okonite Company, Passaic, N. J.

Available through authorized distributors only.

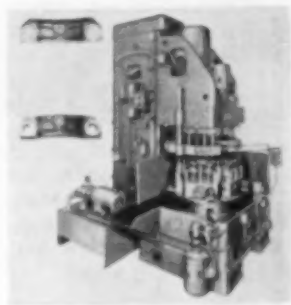
Made by
THE OKONITE COMPANY
PASSAIC OKONITE SINCE 1878 NEW JERSEY

2565

If you write maker identify as IEN - 11550

Machining - Five station automatic to drill, face and tap a bearing cap

Source: BUHR MACHINE TOOL CO.
839 Green St., Dept. IEN, Ann Arbor, Mich.



Built to order

Peak production for this new automatic indexing machine is 670 pieces per hour. The machine loads four parts per station. It employs a combination drilling and tapping head with an independent lead nut plate. Multiple drill heads are ball bearing construction. The lead screw tapping spindles carry chromium plated threads. The automatic index is electrically controlled. It is cam and roller design for uniform acceleration.

If you write maker identify as IEN - 11551

Cleaning - Portable vacuum machine for wet or dry use, has 5/8 hp. motor

Source: CLARKE SANDING MACHINE CO.
30 E. Clay Ave., Dept. IEN, Muskegon, Mich.

Operates quietly

Model QD-5 is a new portable vacuum cleaning machine measuring 14 in. in diameter by 22 in. in height. It has dry capacity of 1/3 bu. and wet capacity of 2 1/2 gallons. The 5/8-hp. motor is rubber mounted with the suction blower. Water lift rates 67 inches. Mounting is on four ball bearing swivel type rubber tired casters. A rubber bumper extends around the aluminum base. The machine can be connected for blowing.

If you write maker identify as IEN - 11552

Hose - To handle compressed air, oil resistant tube, woven rayon cord

Source: HAMILTON RUBBER MFG. CORP.
Box 361, Dept. IEN, Trenton 3, N. J.

Sample on request

Revelation designates a new compressed air hose employing a neoprene oil resistant tube, rubber impregnated Cordura rayon cord and a red rubber cover that is resistant to wear, abrasion and severe service conditions as in car shops, foundries, quarries, mines, shipyards.

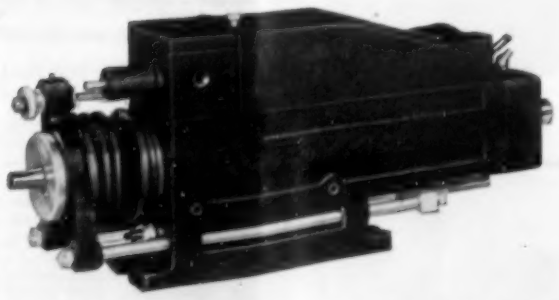
Standard length is 50 feet. Four sizes, between 3/8 and 3/4 in., rate working pressure to 300 pounds. A fifth size, 1 in., rates 250 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11553

Bellows-Locke DRILL UNIT

Combines Hydraulic Feed
Air Powered Rapid Advance
Electrically Driven Spindle



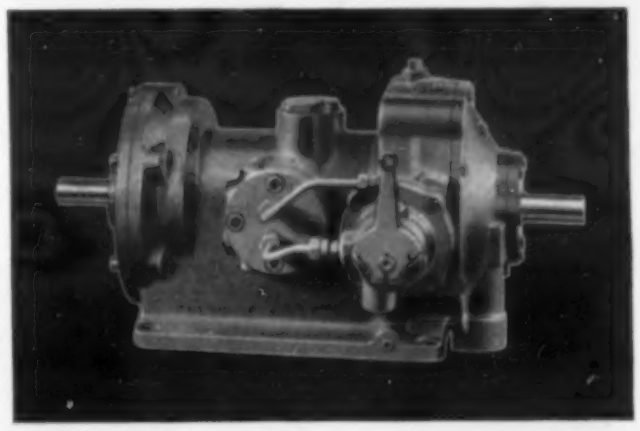
Full 3" stroke—any part usable. Takes up to 5/16" drills. Either pulley driven or direct motor drive models available. Compact, streamlined, lightweight Can be mounted at any angle in any plane. Any number of units can be easily synchronized and interlocked for accurately timed sequence operation.

Write for Bulletin BL-5 Address Dept. IEN 1054

The Bellows Co.
AKRON 9, OHIO
In Canada:
Pneumatic Devices of Canada, Ltd.,
Toronto, Ontario

910A

If you write maker identify as IEN - 11554



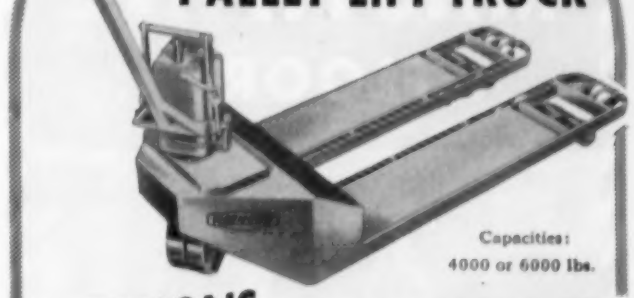
ANY-SPEED OILGEAR FLUID POWER TRANSMISSION Solves drive problems —Improves machine performance

Even machines that lead their fields have benefited greatly by a change to the *ANY-SPEED* Oilgear Fluid Power Transmission . . . simply because top machine performance often depends on a speed flexibility other drives just don't have. The *Any-Speed* Oilgear is *just that*—from zero to 1600 r.p.m. And once you pick your best speed it stays there . . . or until you want to change. Smooth shading of speed all the way up or down. Full control manually, hydro-electrically, pushbutton or automatic remote. Small, durable, dependable, this "power package" installs easily, ends drive trouble, saves power, cuts maintenance to a sliver. Simple, accessible design. Drives off any constant speed source. Write for descriptive Bulletin 67110A. THE OILGEAR COMPANY, 1567 West Pierce St., Milwaukee 4, Wis.

If you write maker identify as IEN - 11555

RAYMOND

Hydraulic
PALLET LIFT TRUCK



Capacities: 4000 or 6000 lbs.

AMERICA'S HEAVY DUTY Twins!

Hydraulic
SKID LIFT TRUCK

Capacities
2500 lbs.
4000 lbs.
6000 lbs.

- IT'S A CINCH to handle heaviest pallet or skid loads with RAYMOND Hydraulic Lift Trucks! These husky trucks . . . built to deliver years of rugged wear . . . are truly America's heavy-duty twins.
- Both RAYMOND Trucks have powerful hydraulic assemblies to make load-lifting easy. Handles operate with long full strokes . . . or short strokes where space is limited. Handles are pressure-balanced to stay put in any position, won't fall when trucks are not in use.
- These trucks come with convenient finger-tip lowering . . . an exclusive RAYMOND feature. They're highly maneuverable, have full 360° turning radius for steering into or out of close quarters. Specially mounted, machine-faced wheels make 'em easy to pull over roughest floors and on upgrades.

The RAYMOND CORPORATION
3540 Madison St., Greene, N.Y.

Please send literature describing ☐ RAYMOND Skid Lift Trucks ☐ RAYMOND Pallet Lift Trucks ☐ RAYMOND Hydraulic Elevating Equipment Catalog.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

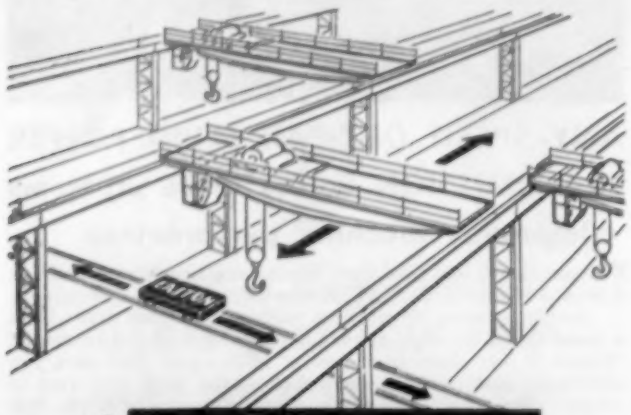
MAIL COUPON

If you write maker identify as IEN - 11557

Cross-Bay Transfer

TRADE MARK

Automatic motor driven transfer cars provide a universal handling system in modern parallel bay plants now served by overhead cranes. Also for transfer between plant buildings.



EASTON

A-1040

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

If you write maker identify as IEN - 11558

PABCO

MASTIPAVE FLOORS

NON-SLIP, SUPER-TOUGH RESILIENT, LOW-COST FLOORING

Floor comfort, floor saving, floor safety, are yours with Pabco MASTIPAVE . . . the long-life, low-cost floor covering that is continually specified by purchasers for factories, hospitals, schools, and government buildings. There's no other flooring like MASTIPAVE. It has defied imitation for years. In rolls, 36" wide, and tiles, 9" x 9", in terra cotta or black.

ONLY PABCO MAKES MASTIPAVE FLOORING —SO, FOR FULL INFORMATION

SEND THIS COUPON TODAY!

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E nearest office)

GENTLEMEN: Without cost or obligation to me, please send your folder, "Every Building Needs Pabco MASTIPAVE."

NAME _____

ADDRESS _____

CITY _____ STATE _____

NEW LITERATURE—Concluded

If you write maker identify as IEN - 0933

STORING—Hopper-front stacking bins slide into interlocking sectional racks to hold parts and materials, remove for handling, assembly. Folder 204, 4 pages. Stackbin Corp., 1077 Main St., Dept. IEN, Pawtucket, R. I.

If you write maker identify as IEN - 0934

STRAPPING—Illustrated suggestions on how to package products for shipping by the use of steel strapping, with a review of available strapping types, accessories and equipment, in new 44-page 15th Edition of "Guide to Better Shipping". Signode Steel Strapping Co., 2604 N. Western Ave., Dept. IEN, Chicago 47, Ill.

If you write maker identify as IEN - 0935

TAPES—Scotch-brand fibre-reinforced acetate tapes with pressure-sensitive adhesive for sealing, holding, protecting, edging, bundling, splicing, identifying. Forty-two application ideas in 6-page Folder P-AFPF. Minnesota Mining & Mfg. Co., 900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

If you write maker identify as IEN - 0936

LIGHT TESTING—Photometer makes light-scattering measurements to determine molecular weights of materials in solution, light reflectance of dark materials. Bulletin BP-1000, 20 pages. Phoenix Precision Instrument Co., 3803 N. 5th St., Dept. IEN, Philadelphia 40, Pa.

If you write maker identify as IEN - 0937

HAND TRUCKS—Up stairs and down, corners, stair wells, can be negotiated with the company's appliance-type hand trucks. Straps hold the load in place. Catalog HTAC-54, 8 pages, shows a number of models. American Pulley Co., 4200 Wissahickon Ave., Dept. IEN, Philadelphia 29, Pa.

If you write maker identify as IEN - 0938

HAND TRUCKS—Made of aluminum in platform, box, tray, trailer and other designs. File folder, "Magcoa-Tobey Equipment", 10 pages. Magnesium Co. of America, 5222 Indianapolis Blvd., Dept. IEN, East Chicago, Ind.

If you write maker identify as IEN - 0939

VALVE OPERATORS—Limitorque is a motor-driven operator for large or small valves. It is actuated by a remote push-button station, has a handwheel, acts to limit amount of torque applied. Catalog L-54, 24 pages. Philadelphia Gear Works, Erie Ave. & G St., Dept. IEN, Philadelphia 34, Pa.

If you write maker identify as IEN - 0940

REGULATING VALVES—Actuation is by pilot, diaphragm, pressure under disc for a line of pressure-regulating valves, together with relief valves, for steam, air, gas, oil, water, hot fluids. Catalog 207, 24 pages. Schade Valve Mfg. Co., 2527 N. Bodine St., Dept. IEN, Philadelphia 33, Pa.

If you write maker identify as IEN - 0941

WELDING—Gas and arc equipment in 52-page Condensed Catalog ADJC-662B includes gases, torches, regulators, gas generators, flame machines, arc welders, electrodes and rod, goggles and helmets, tools. Air Reduction Sales Co., 60 E. 42nd St., Dept. IEN, New York 17, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

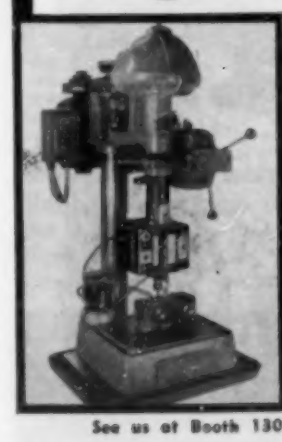
If you write maker identify as IEN - 11560

Commander LEAD-MATIC Tapper

Automatic Tapper with Lead Screw
FOR HIGH PRODUCTION PRECISION TAPPING

- Precision Ground Lead Screws Assure Finest Threads
- Electrically Controlled Cycle or Jog Tapping Action
- Hand, Foot or Fixture Switch Control
- Easily Adapted to Any Drill Press
- Range #0 to ¾"

Built for high production tapping . . . precision or otherwise, the Commander LEad-Matic Tapper makes any drill press a precision tapping unit, even with inexperienced operators. Electric control of Cycle or Jog tapping action provides versatility to handle any job . . . automatic tap reversal eliminates drill press motor reversing and speeds tapping. Compact, ruggedly built, easy to operate, the Commander LEad-Matic Tapper will cut your tapping costs and reduce rejects to a minimum.



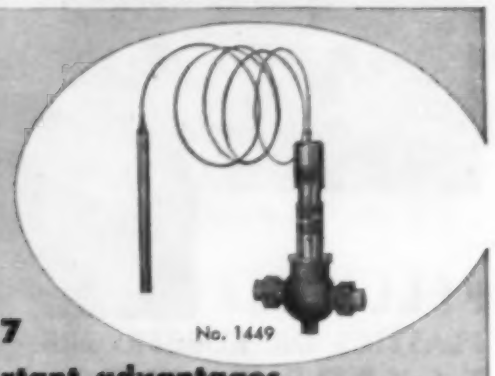
Write for illustrated circular and name of nearest Distributor.

Commander MFG. CO.
4219 W. KINZIE ST. • CHICAGO
PRODUCT OF COMMANDER, BUILDER OF PRODUCTION TOOLS

See us at Booth 1309, National Metal Show, Chicago.

If you write maker identify as IEN - 11561

new Klipfel tank thermostat valve



No. 1449

with 7 important advantages

- Long life hardened metal ball inner valve
- Trouble-free one-piece metal bellows
- Built-in overheat protection • Generous 50° adjustment range
- Quick, uniform throttling action • Positive, tight closing
- Wide selection of temperature ranges

For dependable, low-cost temperature control, select this NEW Klipfel Thermostatic Valve . . . perfected to give the service you want with accuracy, dependability and minimum maintenance.

Klipfel VALVES, INC.
1072 Lincoln Avenue • Hamilton, Ohio
Export Office—1010 Schoff Building, Philadelphia 2, Pa.

If you write maker identify as IEN - 11562

Easier on the eyes ...and the overhead!

Ozalid® prints are white prints—clear, sharp, with dull surface that doesn't reflect light, show glare—far easier to work with.

An Ozalid print can be revised to show changes or modifications without altering the master drawing.

AN OZALID machine can copy anything drawn, typed, printed, or written on translucent paper, fabric or film—and deliver dry copies on Ozalid coated paper, fabric, or film . . . in any size and quantity needed, in a matter of minutes . . . without waiting or delay, and at low cost.

Anybody can use an Ozalid, no special training or experience required. Call the nearest Ozalid distributor (*see phone book*) and ask for a demonstration of the model best suited to your requirements. Or write for free brochure to 124 Ozaway, Johnson City, New York.

OZALID—A Division of General Aniline & Film Corporation . . . *From Research to Reality.*
In Canada, Hughes Owens Company, Ltd., Montreal.

OZALID STREAMLINER—*copies material up to 42 inches wide, at speeds up to 14 feet per minute. Ideal for average industrial and business requirements.*

OZALID

If you write maker identify as IEN-11564

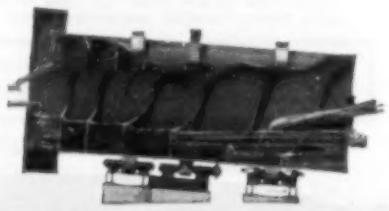
Wet and Dry Classifiers

"GYROTOR" Classifier

The "Gyrotor" Air Classifier is designed for extremely close control of product in a dry grinding or separating operation. It can be used in closed circuit with a pulverizing mill or as a self-contained sizing unit for any moving stream of air-solids mixture. Hardinge Bulletin AH-449-38 describes this new classifier in detail.

"COUNTER-CURRENT" Classifier

The unique "spiral squeeze" action of the Hardinge Counter-Current Classifier literally wrings the slimes from the sands — producing a cleaner, more uniform oversize, nearly dry if desired. Can also be used as a scrubber. Highly efficient when used in closed circuit wet grinding systems. Bulletin 39-B-38.



HARDINGE
COMPANY, INCORPORATED

YORK, PENNSYLVANIA • 240 Arch St. • Main Office and Works

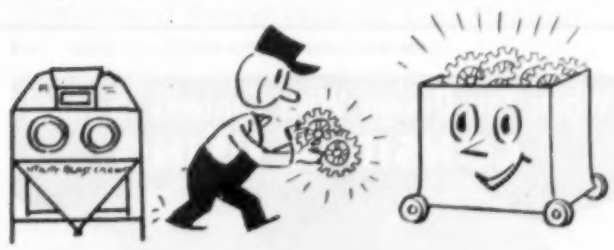
New York • Toronto • Chicago • Hibbing • Houston • Salt Lake City • San Francisco

If you write maker identify as IEN-11565

PANGBORN BLASTS by don herold

When those small metal parts call out, "Hey, cleaning time!" And you have to remove scale, old paint, rust or grime . . .

You can clean them in seconds and save money, too— Pangborn's Blast Cleaning Cabinet's made just for you.



It produces a finish so smooth and so clean, It will do the best job that you ever have seen.

Pangborn Blast Cleaning Cabinet

for efficient, low-cost cleaning of metal parts. Cleans pieces up to 35" x 60" in size. Models from $319 and up.

For details, write:
PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.

Pangborn

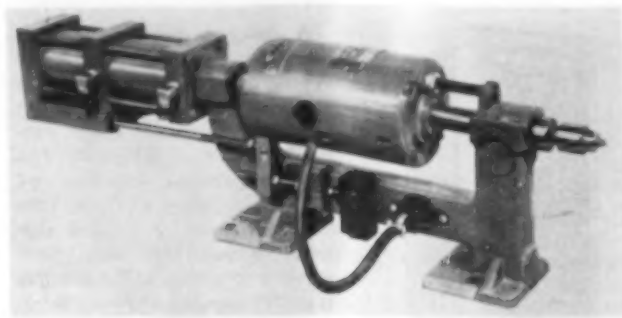
50th Anniversary Medallion

BLAST CLEANS CHEAPER with the right equipment for every job

If you write maker identify as IEN-11567

Drilling - Variable speed machine for holes from 0.004 to 5/32 inch

Source: ELECTRO-MECHANO COMPANY
261 E. Erie St., Dept. IEN, Milwaukee 2, Wis.



Bulletin 110-111

New feed, employing pneumatic and hydraulic cylinders in tandem, has been added to the sensitive drilling machine previously described IEN-9707-54. Air from a shop source provides the feed pressure and means for fast spindle retraction. Hydraulic fluid in a closed circuit in the hydraulic cylinder holds a predetermined feed rate constant and releases for fast return. Feed rate can be set between 1 in. in 60 sec. and 1 in. per second. Total quill travel is 1½ inches. The assembly is available for vertical or horizontal mounting, singly or in multiple.

Drive is by a ⅛-hp. ball bearing universal motor operating at 6,000 rpm. in connection with a centrifugal governor. Speed adjustment is made by moving a lever on the front of the housing for stepless range between 1,000 and 10,000 rpm. or 2,500 and 15,000 rpm. Stops can be set to limit the drilling depth. Limit switches are available for step drilling, and for sequence operation of several assemblies. Control centers at a pushbutton to operate a relay that, in turn, operates a four-way pneumatic valve in the air cylinder circuit.

If you write maker identify as IEN-11568

Hoist - Drum type electric, ½ and 1 ton rating, 20 and 16 ft. lift

Source: MANNING MAXWELL & MOORE INC.
Dept. IEN, Muskegon, Mich.

For production

Lug, hook and trolley suspension are available in two new electric hoists in the company's Load Lifter line. One rates ½ ton, is available in lift speeds of 15 and 30 fpm. with rated load to employ ½ and 1-hp. motors respectively. The other rates 1 ton and operates at 8 or 16 fpm. with a rated load and ½ or 1-hp. motor. Operation can be specified on single-phase 110-volt ac. or three-phase 220 or 440-volt ac.

The hoist frame is made of aluminum for light weight combined with strength. The gearing is alloy steel, heat treated. Control centers at a push-button station in a 24-volt circuit. The load drum is machine grooved. Interchangeable suspension and positive upper stop prevent overtravel. All shafts ride on ball bearings.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11569

NOZELTING **Faultless** ENGINEERED **TRUCK CASTERS** CUT HANDLING COSTS

NEW!

MEDIUM DUTY INDUSTRIAL CASTER

Cuts Handling Time —Saves Man-Hours

900 Series Double Ball Bearing Swivel Plate Caster with Vulcanized Rubber Tread Wheel

The 900 Series, all purpose, Truck Caster has heavy pressed steel horn and top plate, corrugated for extra strength. Swivels easily on *two* full rows of hardened balls rolling around *two* separate raceways. Choice of six kinds or wheels to suit load *(175 lb. to 550 lb.)* and floor surface conditions.

All the engineering "know-how" from *over half a century of specialized experience* is yours in Faultless Industrial Casters—to speed production lines, trucks, portable equipment . . . with *less time, noise, effort.* Ask for Cat. 157, no obligation.

FAULTLESS CASTER CORPORATION
Dept. IE, Evansville 7, Indiana
Branches in Principal Cities—Canada Factory: Stratford, Ont.

If you write maker identify as IEN-11570

New! **VARY-TALLY**

Multiple-Unit Reset Counter

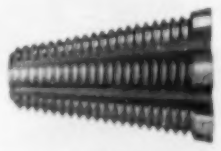
Single units, or any combination up to 6 banks high, 12 units wide. Write
VEEDER-ROOT Inc.
HARTFORD 2, CONN.

If you write maker identify as IEN-11571

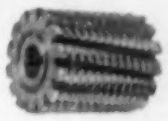
TO MILL PRECISION THREADS ON PRODUCTION PARTS

Ground shank type thread milling cutter for threading two diameters at the same time.

Continental shank type high-speed steel ground thread milling cutter.



Tapered, shell type multiple thread milling cutter



Shell type multiple thread milling cutter for machining a special radius form.

CTW THREAD MILLING CUTTERS are precision ground to produce accurate threads with a fine finish. They're form-relieved for easy sharpening. Made of best type high-speed steel, hardened in our own shop.

Call in your local Ex-Cell-O representative—or send tool or part print to Continental for a quotation.

54-47

CONTINENTAL TOOL WORKS
Division of
EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

CTW STANDARD AND SPECIAL CUTTING TOOLS, BROACHES, BROACH FIXTURES.

If you write maker identify as IEN-11572

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique Centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

Write for New FREE Bulletin 265R

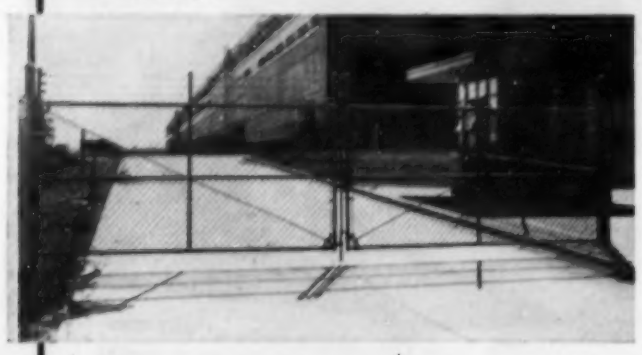
DRYING and CONCENTRATING CO.
322 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN-11573

REALOCK FENCE

Protection that's all around your grounds; all around the clock. An ever-present, ever-vigilant guard against arson, burglary, vandalism and other costly hazards.

See your classified telephone directory for nearest sales office or write to any of our three division offices for free estimate and catalogs.



THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
CFI

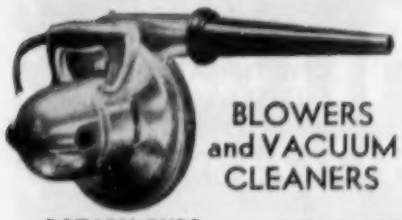
BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN-11574

MARTINDALE

Selections from Big 64-Page Catalog

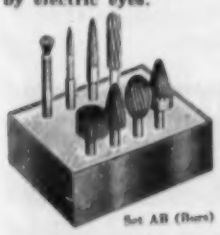
COMMSTONES



BLOWERS and VACUUM CLEANERS

ROTARY BURS AND FILES

Made of high-speed steel. Produced in our own factory where uniform hardness is assured by heat-treating in electric furnaces on which the temperature is closely controlled by electric eyes.



Set AB (Burs)

DEMAGNETIZER — Model D-3

Write for 64-page Catalog No. 29 describing many products for Industrial Maintenance, Safety and Production.

MARTINDALE ELECTRIC CO.
1353 HIRD AVENUE CLEVELAND 7, OHIO

If you write maker identify as IEN-11575

Save Draftsmen's Time
YOUR TYPIST CAN DO THE JOB BETTER

The Vari-Typer lettering machine is the fastest and most economical method of lettering specifications on tracings and drawings. No more tedious time-consuming lettering operations requiring expensive time of skilled draftsmen.

The Vari-Typer lettering machine is four to five times faster than hand lettering and is operated by an office typist. Every letter and figure is uniformly clear and distinct. Instantly changeable type, with hundreds of different styles to choose from in sizes ranging from 6 pt. to 18 pt. Write today for information.

Vari-Typer

Lettering Machine

Body copy produced on DSJ Model. Headlines photo-composed on the Headliner.

RALPH C. COXHEAD CORP.
720 Frelinghuysen Avenue
Newark 5, N.J.
Please send Vari-Typer Book E-13
NAME.....
COMPANY.....
ADDRESS.....
CITY.....ZONE...STATE....

If you write maker identify as IEN-11576

Heating - Induction equipment to anneal, harden, braze and solder

Source: LINDBERG ENGINEERING CO.
2444 W. Hubbard St., Dept. IEN, Chicago 12, Ill.

For production use

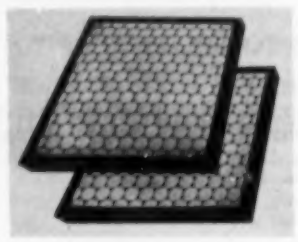
A motor-generator set, operating at 960, 3,000 or 9,600 cycles, supplies the power to operate this new induction heating equipment. Input rating is 50 to 1,250 kw. The design permits location of meters, signaling devices, timing equipment and work stations where they will best serve a given location. Output transformer busses can be positioned vertically or horizontally to suit given types of work coil. Assembly is in a steel housing that measures 39 by 39 by 76 inches.

Operation is timed by a four circuit synchronous timer to control three operations in addition to the heat cycle. Vernier adjustments are provided on the first three positions for heat, quench and capacitor contactor. A variable ratio water cooled output transformer rating 300 kw. can be supplied. A magnetic amplifier is available to control the power output. Auxiliary equipment for work handling can be specified.

If you write maker identify as IEN-11577

Dust Collecting - Filter panel, processed glass fiber, is disposable

Source: FILTREX CORPORATION
33-40 127th Place, Dept. IEN, Corona 68, N. Y.



For hot or cold air

The glass fiber employed in this new filter panel is processed to bond the individual fibers together so the filter pack remains firm and holds its shape. Openings will not form through which air can blow without being cleaned. The process also softens the fibers to eliminate stiff glass slivers. It holds the fibers to permit specific rated densities within the pack for air filtering and dust collecting.

Assembly is in a box type frame with reinforced metal corners. The metal grill is laminated to the frame on the two faces. Sizes range from 14 by 10½ by ½ in. to 20 by 25 by 2 inches. Three thicknesses are ½, 1 and 2 inches.

If you write maker identify as IEN-11578

Protection against bad weather is provided by a new window equipped steel cab for all models of the Michigan Tractor Shovel. If you operate such a shovel ask Clark Equipment Co., Dept. IEN, Battle Creek 49, Mich., for specifications on the All Weather Cab.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11579

This torque tool leads a

DOUBLE LIFE

FIRST it's a torque screw driver

THEN it's a torque wrench!

This scientifically accurate Apco torque tool does double duty. You can use it for driving screws where tension must be measured accurately. Then, remove the bit . . . substitute a socket, and presto — it becomes a vertical torque wrench that can be used to tighten nuts up to 100 inch pounds. Available in 13 size ranges — in inch grams; inch ounces; and inch pounds.

Here's your chance to save money . . . with two tools in one! This minutely accurate torque tool is made with the same care that characterizes all Apco Mossberg Torque Tools. Send for complete facts. Apco Mossberg Company, 171 Lamb Street, Attleboro, Mass.

APCO MOSSBERG COMPANY
ATTLEBORO, MASS.

If you write maker identify as IEN-11580

PROTECTION
for your men and materials

AT RAILROAD SIDING OR TRUCK DOCK

- Keeps men warm and dry
- Prevents merchandise damage
- Reduces heat loss
- Simple, inexpensive, sturdy
- Folds flat when not in use
- Custom-made to fit

Keeps your loading dock useful every day of the year. Made of heavy, flame- and water-resistant canvas with sturdy frames and hardware. Three scissors arms on each side give rigid support; no bottom bar to impede truck tailgate. Cover roof slopes for rain run-off; canopy extends inside truck or car, keeps walkways dry.

CANVAS — for all your needs — industrial, commercial, private — over 100,000 square feet in stock

Write or phone for full details

A. MAMAUX & SON
120 BOULEVARD OF THE ALLIES

PITTSBURGH 22, PA. phone COurt 1-3500

If you write maker identify as IEN-11581

FLORLINE MARKING MACHINE

WITH 3rd WHEEL GUIDE . . . MAKES SAFETY & PARKING LINES AT WALKING SPEED. 20 TIMES FASTER THAN HAND MARKING . . . OFTEN PAYS FOR ITSELF ON FIRST JOB!

- Third wheel 18" forward of carriage keeps machine "on track" long before marking begins
- Guide Wheel arm folds back at curb or wall, lets machine run right up to barrier
- Machine wheels to other areas of work with slight lift of handle
- Makes straight, curved, continuous or skip lines 2, 3 or 4" wide with interchangeable carriages
- Gravity feed, no motor or attachments, heavy gauge metal
- Holds 1½ gallons. Easy to clean and store

$97.50

F.O.B. Detroit
Fully Guaranteed

H.C. SWEET CO.
12346 Telegraph Rd.
Detroit 39, Mich.

If you write maker identify as IEN-11582

When You Design With Contacts in Mind
CONSIDER USING

Gibsiloy ELECTRICAL CONTACTS

Electrical contacts are vital parts of many electrical products. When you plan and design new products—or revamp old ones—keeping contacts in mind from the outset will save you trouble.

What job must the contact do in your product? Does it have to carry large current? Is it to be used frequently or at long intervals? Will an extreme combination of low voltage, low contact force and low current cause contact failure in your product unless a specially-adapted contact is used?

All these and many more questions are answered daily by Gibson engineers, whose aim for 21 years has been to provide the most practical and economical contacts and contact assemblies for each specific purpose.

Let us know the electrical problems inherent in your product and we will cooperate in developing the right contact for you . . . to achieve product economy and efficiency.

For some answers to your contact problems, write now for Gibson Catalog C-520. It contains much valuable technical data. No obligation on your part. It's free.

CONTACT GIBSON FIRST

Gibsiloy ELECTRICAL CONTACTS
Manufactured by
GIBSON ELECTRIC COMPANY
8353 Frankstown Avenue • Pittsburgh 21, Pa.

If you write maker identify as IEN-11583

Control vibration the low cost way

...with ISOMODE® PAD under each machine foot

It's now easy to put an end to damage and annoyance from machine vibration and shock. All you need is a stock of money-saving Isomode Pads. Just cut what you need for the weight on the machine foot or base—and install. That's it. The pads swallow up vibration. Machines are anchored without bolting. Building and machine maintenance drops. Noise diminishes.

Thousands of actual installations prove that Isomode Pads work on most machines—punch presses too. Made of Neoprene, they last for years and years. Write for Bulletin 415 and prices.

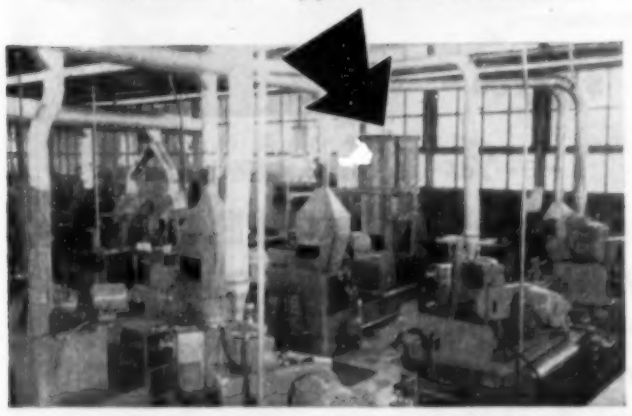
®Trade Mark Reg. U.S. Pat. Off.

IT PAYS TO KEEP A PACKAGE IN STOCK

THE MB MANUFACTURING COMPANY, INC.
1064 State Street, New Haven 11, Conn.

If you write maker identify as IEN-11584

Cogsdill Twist Drill Company gets 73% LONGER GRINDING WHEEL LIFE with HOUDAILLE "J" Type Coolant Clarifier



Detroit Manufacturer Also Reports Elimination of Manual Pump and Sump Cleaning, Better Product Finishes

• 73% longer wheel life, fewer rejects and indefinite safe-use life of coolant—that's the record of the Houdaille J-149 Coolant Clarifier at Cogsdill Twist Drill Company of Detroit.

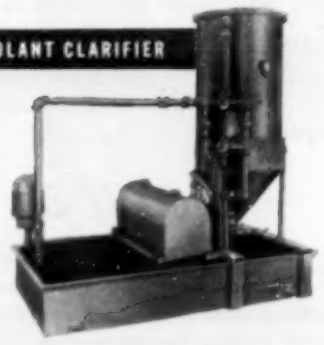
At Cogsdill the "J" Type Clarifier provides centralized, multi-tube filtration of grinding coolant for six flute grinders. Dirty coolant is piped directly into the clarifier where chips, abrasives and other solids are completely removed.

Grinding wheels, formerly dressed after a run of 75 pieces, now average 120 pieces. Clean coolant also prevents overheating and subsequent burning of drills.

Elimination of individual grinder pumps and sumps, which had to be serviced every two weeks, has greatly reduced labor and maintenance expense.

Thanks to the Houdaille "J" Type Clarifier, Cogsdill now gets more output from its grinders at less cost and at higher operating efficiency.

HOUDAILLE "J" TYPE COOLANT CLARIFIER



for all water based or mineral oil coolants used in individual machine tools or small central systems.

New Multi-Tube Design Features

- 16,000 square inch filtering area keeps coolant clean, safe to use indefinitely.
- Self-cleaning filter tubes require no manual cleaning or maintenance.
- Simplified, low cost operation—no precoating, filter aids or expendable filter media.
- Several models available depending on capacities to be handled.

Write for literature and case history

HONAN-CRANE Oil Purification Equipment

Honan-Crane Corporation
802 Wabash Avenue, Lebanon, Indiana
subsidiary of
Houdaille-Hershey Corp.

If you write maker identify as IEN-11586

Cleaning - Abrasive blast machine is air operated for hand held work

Source: CRO-PLATE COMPANY
747 Windsor St., Dept. IEN, Hartford 5, Conn.

No pump required

Pressure Blast, Jr. is a new wet abrasive blast machine for multi-unit installation in a large plant or for application in single units in the small plants for connection to a shop air line. The compressed air operates through a venturi in the blast gun to pick up the mix of abrasive and water from a hopper and deliver it under pressure on the work surfaces. The work is entered through a hinged loading door at the front equipped with arm ports.

Construction is in stainless steel. The interior is illuminated with a 150-watt explosion proof spotlight. A blower operates to keep the interior clear. Louvers assist in the ventilating action. A pedal operated window wash actuator removes accumulation of abrasive from the inner side of the window. Air input is equivalent to that produced by a 3-hp. compressor.

If you write maker identify as IEN-11587

Adhesive - Resin based liquid for corrugated fruit and nut cartons

Source: SWIFT & COMPANY
4115 Packers Ave., Dept. IEN, Chicago 9, Ill.

Data and prices upon request

New resin sealer is characterized by its quick set-up time to keep step with fruit packing operations. It is applied in the case sealing machine as it comes from its 55-gal. steel drum. No dilution is required. The adhesive is light in color, dries to a transparent film. It is known as the Citrus Carton Resin Adhesive in the company's product line.

If you write maker identify as IEN-11588

Fastening - Spring steel nut has flanged base for electric grounding

Source: PALNUT COMPANY
61 Cordier St., Dept. IEN, Irvington 11, N. J.

Flange digs in

Two sizes are 10-24 and ¼-20 for this new design of locking Palnut. The flanged base carries sharp points to dig through non-conducting materials to make an electrically grounded assembly. The nut was originally developed for automobile lamp assemblies to ground through non-conducting coatings on the metal parts. The one-piece nut and washer flange produce a double locking action when the nut is tightened in place.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11589

PROTECT your expensive dies and machine parts

USE **ACME** RED OR BLUE LABEL PRECISION **DOWEL PINS**

Acme Dowel Pins break before bending or mushrooming—thus saving expensive equipment from ruin through misalignment. Order standard sizes from stock. Attractive prices on special sizes and large quantities.

WRITE FOR DESCRIPTIVE CIRCULAR

Acme Industrial Company
Makers of Standardized Jig & Fixture Bushings
215 N. LAFLIN STREET • CHICAGO 7, ILLINOIS

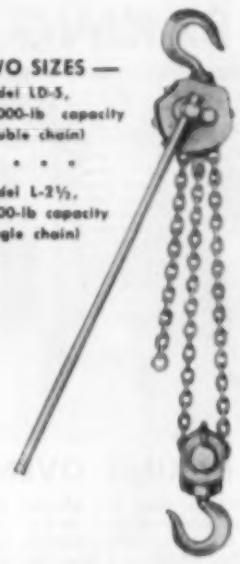
THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

If you write maker identify as IEN-11590

New . . . Different . . . Better

COFFING Super Power COIL CHAIN RATCHET LEVER HOIST

TWO SIZES —
Model LD-5, 10,000-lb capacity (double chain)
• • •
Model L-2½, 5,000-lb capacity (single chain)



For over two years the entire production of Coffing's new Super Power Hoist has gone into military service. Now it is available to bring new standards of ratchet hoist performance to civilian users. Here are just a few advantages the new hoist offers:

TOUGH for safety and dependability
Every load-holding ratchet is tested at 30,000 lb. "Drop Test" spot checks hoists under 40,000-lb impact load.

SIMPLE in design
May be completely disassembled in the field.

CONVENIENT to use
Handle length is adjustable may be operated from either side of hoist. Needs only 70-lb pull to lift 10,000-lb load.
For full information write for bulletin P101L.

COFFING HOIST COMPANY
Danville, Illinois
Originators of the Ratchet Lever Hoist

Quik-Lift Electric Hoists • Hoist-Alls • Mighty-Midget Pullers • Spur-Gear Hoists
Differential Chain Hoists • Load Binders • I-Beam Trolleys

If you write maker identify as IEN-11591

IT TAKES LESS TIME TO MICRO-FINISH HARD MATERIALS WITH

ELGIN DIAMOND

This booklet will help you Write for your free copy now!

See pictures of Elgin diamond in application . . . gives details of method, grades to use and time required. Write today!

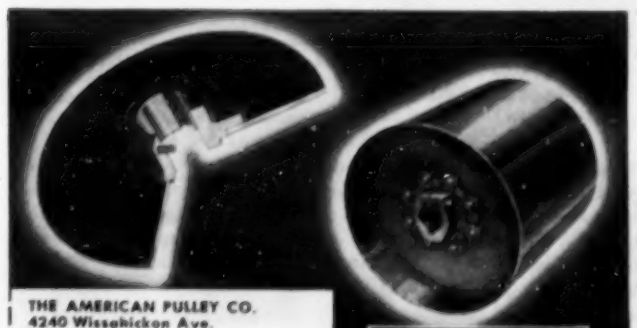
ABRASIVES DIVISION
ELGIN NATIONAL WATCH COMPANY
Dept. H
ELGIN, ILL.

If you write maker identify as IEN-11592

NEW PULLEY DESIGN MEANS LONGER LIFE, LOWER COSTS, LESS MAINTENANCE

The new design American Pulleys are the best friends a conveyor belt ever had. They're easier to install, built to take the severest kind of service, and cost next to nothing to maintain because they are fully dirt- and splash-proof. Size for size, they will outwear, outwork any other pulleys made.

New Type "HD" Pulley features the Wedg-Tite Hub, a special interchangeable split-tapered design which combines maximum strength with minimum weight to give the greatest shaft grip ever developed in a conveyor pulley. Two other types—Type "L" for light and medium duty, and Type "O" a steel split model—round out the new line to cover all types of service. See your distributor or write today for full information. There is no obligation.



THE AMERICAN PULLEY CO.
4240 Wissahickon Ave.
Philadelphia 29, Pa.

Please send full information on the new American Conveyor Pulley Line.

Name_____
Company_____
Address_____
City_____ Zone____ State____

Power Transmission by **AMERICAN PULLEY COMPANY**

At the Profit End of the Machine

If you write maker identify as IEN-11593

FAST FINISH BAKING

Refinished Relay Covers and other Control Parts Formerly Air Dried in 8 hours—Now a Better Wrinkle Finish is Despatch-baked in ONE Hour.

Despatch R-S FINISH BAKING OVEN

● Minneapolis-Honeywell Regulator Co. uses the above Despatch R S Oven for refinishing of controls sent in for repair. The black wrinkle enamel on the relay cover shown is baked to an extremely hard, durable finish in 1 hour at 300° F. saving 7 hours of former air drying time! Other parts are baked ½ hour at 350° F. This fast baking of finishes speeds up the entire repair program, improves service to customers.

Despatch R S Ovens are well insulated, very economical, 100% controlled for uniform heat up to 500° F., with temperature variation seldom more than 3° ± F. Built in a range of sizes for a great variety of applications. Tell us your needs—

Write for Bulletin on R S Ovens.

DESPATCH OVEN CO. Established in 1902

Manufacturers of ovens for: Paint Finishing, Dehydrating, Curing, All Industrial and Laboratory Applications

337 Despatch Bldg. • MINNEAPOLIS 14, MINN.

If you write maker identify as IEN-11594

Edmont Case No. 504: Handling 1 to 2 lb. castings in hot caustic solution treatment. Ordinary plastic coated gloves had to be replaced after 1½ to 2 shifts. **Job-fitted** Edmont gloves lasted through 6 shifts — 3 to 4 times longer.

Job-fitted gloves wore 3 times longer

No. 932
Heavy duty Neox coated

In case after case, in all types of industry, Edmont **job-fitted** gloves, made of coated fabric, have widely replaced canvas, leather and unlined rubber gloves. Records prove they give 3 to 10 times longer wear, improve safety and work output. Cost savings of 40% to 70% are usual.

No. 360
Palm coated plastic (Durex)

Edmont Case No. 472: Feeding oily sheet steel into shear, metal furniture plant reports leather palm gloves wore only 4½ hours, were cleaned and re-issued every 1½ hours. Edmont palm coated Monkey Grip gloves lasted 16 hours.

No. 60W
Palm coated rough finish natural rubber

Edmont Case No. 293: Pulling condenser tubes, cotton gloves lasted only one hour. Edmont palm coated Grab-it gloves gave 6 hours service.

Edmont Case No. 531: Handling steel sheets on shearing table. Old-fashioned fabric gloves gave out in 4 hours. Modern **job-fitted** coated gloves lasted 15 hours.

Free Test Offer: Let us help you fit the correct gloves to your jobs. Send a description, on your letterhead, of your operations, materials handled and temperature conditions. Without cost we will recommend and forward samples of gloves, for job-testing. Our laboratory also develops special gloves to meet special conditions.

Edmont Manufacturing Co., 1226 Walnut St., Coshocton, Ohio

World's largest maker of coated industrial gloves, available through leading industrial suppliers.

Edmont

Edmont job-fitted gloves

If you write maker identify as IEN-11596

Relay - Sensitive electronic unit actuates circuit on very small input

Source: DELTRON INCORPORATED
2905 Leithgow St., Dept. IEN, Philadelphia 33, Pa.

Amplifies input

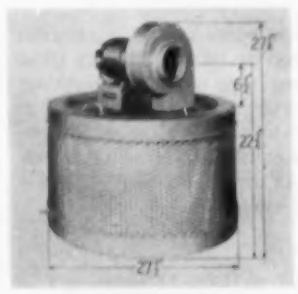
Model 300A is a new sensitive electronic relay for use in connection with signaling and control from remote locations by actuating elements such as mercury thermo-regulators, bimetal and expansion type thermostats, contact type pressure transducers, sensitive transmitting devices for liquid, voltage regulation. The relay contacts rate 1,500 watts. The low short circuit current, of about 1 microampere, and the open circuit rating, of approximately 6 volts, prevent carbonizing sensitive mercury thermo-regulators and prevent contact deterioration of mechanical devices.

Assembly is in a housing measuring 6 by 4 by 5 inches. It is made of steel. Two receptacles on the housing face permit plug-in connection for normally closed or normally open operation. Pilot lights indicate the active circuit.

If you write maker identify as IEN-11597

Vapor Collector - Removes oil from the air surrounding a machine

Source: AGET-DETROIT COMPANY
401 Main St., Dept. IEN, Ann Arbor, Mich.



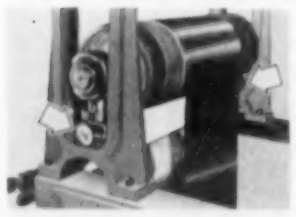
Easy to clean

Model VCS-2 is new design in the company's line of vapor collectors, previously described IEN-13187-53. The new machine is featured by a centrifugal blower with flat blades that will handle oil mist and also grit and stringy materials as they come from an abrasive belt. The foreign matter is retained for periodic removal. Clean air is returned to the room.

The collector assembles in a space measuring 28 by 28 by 28 inches. It is driven by a ⅓-hp. motor. It rates 614 cfm. with a single 5-in. inlet. It can be located overhead so mist condensate that will flow from the housing can return to a machine sump by gravity.

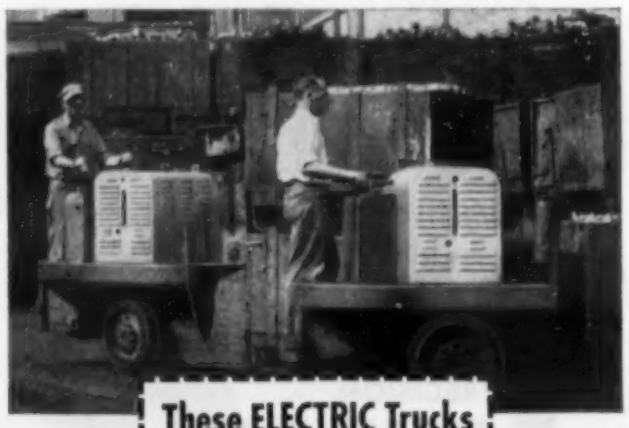
If you write maker identify as IEN-11598

Tension is being measured in a moving strip of tin plate by Dillon gages positioned under the two ends of an idler roll over which the strip rides. The gage is made by W. C. Dillon & Co., 14620 Keswick St., Dept. IEN, Van Nuys, Calif. It is designed for application and removal in the idler roll frame. Dimensions of the 5,000-lb. unit are 4¾ by 2⅛ by 3⅛ inches.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11599



These ELECTRIC Trucks Will Never be "Down" due to Lack of Power!

Only electric industrial trucks give you the advantage of interchangeable power so that trucks can work while power units are being serviced. With Ready-Power drive you get a double advantage: (1) The quick interchangeability of electric power units, (2) The constant full power of gas-electric or Diesel-electric drive. Write for information.

READY-POWER

The READY-POWER Co., 3830 GRAND RIVER AVE., DETROIT 8, MICH.

Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

If you write maker identify as IEN-11600

Cuts Metal 15 Times Faster than Hand Hack Saw!

New . . . Porter-Cable *Portable Band Saw* only $215.00

Slices through 1½" cold rolled steel in 41 seconds! That's 15 times faster than a good man with a hack saw . . . *2½ times faster than bulky power hack saws!*

Compact. Weighs only 16 lbs. Easy to handle in any position. Powered for heavy duty. Band speed of 240' per min. insures swift, smooth cutting of all materials up to 3¼" dia. round, or 3¼"x4¼" rectangular. Highest grade precision ball and needle bearings. Universal 115V AC-DC, 25-60 cycle motor (230V available at extra cost).

Write for full information about time-saving application.

PORTER-CABLE MACHINE CO.
2210 N. Salina St., Syracuse 8, N. Y.

If you write maker identify as IEN-11601

A NEW CONCEPT FOR EASIER DRILLING

WITH Milwaukee HEAVY-DUTY ¼" MODEL B

$42.00

In-Line HOLE-SHOOTER

With PALM-PUSH Grip *

Puts The PUSH Where It Belongs . . . In DIRECT LINE With The Drill Chuck

Study the photo above and you'll quickly see what we mean. Here's a drill that's all new . . . New in idea, new in design, new in power and brings new ease to power drilling.

In-Line design provides a straight line push from the elbow through to the twist drill. Result . . . less wrist fatigue, truer holes, fewer broken twist drills and no blisters from switch trigger.

MOST POWERFUL DRILL OF ITS SIZE ON THE MARKET
Made of the best material and Fully Guaranteed. It's powered by an entirely new motor that develops more than 1/5 horsepower. All ball and roller bearings lifetime lubricated.

Truly a top quality heavy duty production drill. We do not make home workshop drills . . . but design and build MILWAUKEE tools specifically for the man who must depend on good tools to make his living.

AVAILABLE IN 6 MODELS . . . 3 CHUCK SIZES
Speed ranges 380 to 5000 rpm . . . chuck capacity sizes ¼", 5/16" and ⅜". Also available with Jacobs Keyless Impact Chuck.

See it in Action

To fully appreciate performance and feel of this new *In-Line* holeshooter, you must see it in action. Just write us and a trained representative will give you an actual drilling demonstration. No obligation on your part.

Write for free folder D-10

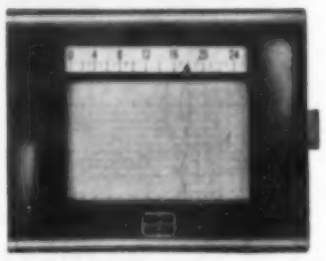
MILWAUKEE ELECTRIC TOOL CORP.
5340 WEST STATE STREET • MILWAUKEE 8, WISCONSIN

If you write maker identify as IEN-11603

....WHAT'S NEW AT BRISTOL....

CONTINUOUS STANDARDIZATION with no dry cells

. . . in Bristol Electronic Dynamaster Potentiometers and Pyrometers



- **CONTINUOUS STANDARDIZATION** eliminates need for dry cells—supplies voltage that is continuously compared with standard cell.
- **CONTINUOUS OPERATION—NO TIME OUT.** With continuous standardization, the potentiometer is free to continuously measure, record, and control. No time out or interruption is required for periodic standardization.
- **NO STANDARDIZING MECHANISM.** Continuous standardization is taken care of electrically. There is no standardizing mechanism.

For the complete story on the modern Bristol Dynamaster, write for free 35-page booklet P1245. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn. 3.19

BRISTOL *THE DEPENDABLE GUIDEPOST OF INDUSTRY*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN-11604

PIPE AND CONDUIT BENDERS
Portable Hand Type

No. 1 Chicago Bender will bend ½", ¾" and 1" Pipe in diameters of 4"-8" and 11".

No. 2 Chicago Bender will bend 1¼" and 1½" pipe in diameters of 14" and 17". Both 1 and 2 are made in Thinwall Benders also.

Write for Literature

GUSTAVE LIDSEEN, INC.
836 So. Central Ave., Chicago 44, Ill.

If you write maker identify as IEN-11605

NEW MORSE TORQUE LIMITER

eliminates shear pins

- Torque-adjustable
- Self-resetting
- Tamperproof
- Adaptable

Avoid Machine Dismantling

Eliminate inconvenience, expense and machine downtime connected with resetting shear-pin mechanisms. The Morse Torque Limiter is torque-sensitive, compact and tamperproof. Can be used with sprockets, gears or pulleys. Gives positive protection on machine drives. Automatically slips at overload setting and resets when overload condition is corrected.

Available from stock in diameters from 3" to 10"; maximum ratings from 20 through 628 ft.-lbs.

Get more details. Send today for Morse Catalogue C-14-54.

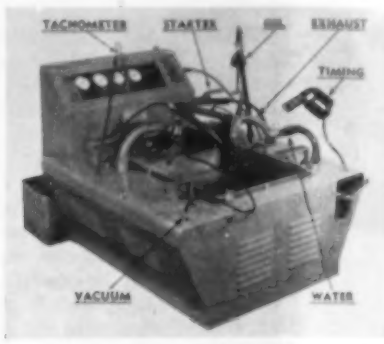
MORSE CHAIN COMPANY
7601 CENTRAL AVENUE
DETROIT 10, MICHIGAN

MORSE BW MECHANICAL POWER TRANSMISSION PRODUCTS

If you write maker identify as IEN-11606

Testing - Inspection stand to run and check a gasoline engine

Source: CONTROL ENGINEERING CO.
8900 Alpine Ave., Dept. IEN, Detroit 4, Mich.



Mechanical Inspector

Illustrated is a new inspection stand with service connections, tanks holding oil and water, a gasoline supply with a delivery pump, a timing light, gages and sequence timer. The stand is employed to run an internal combustion engine under no load conditions and to check its assembly and performance.

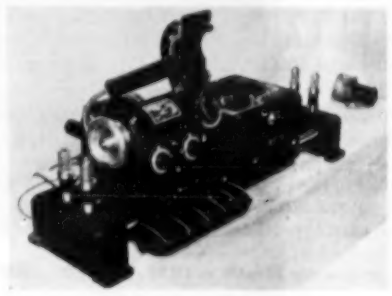
The engine to be tested can be suspended over the stand or integral support brackets can be supplied to which the engine is clamped. Quick clamping connectors are supplied for oil, water, gasoline, ignition and exhaust. Instruments read rotating speed, intake manifold vacuum, oil pressure, combustion efficiency, timing, and water temperature.

A test sequence can be set up, such as increasing the water pressure, to show any leaks, continuous flushing of the engine with preheated oil, analysis of the exhaust gases after the engine has reached a pre-set temperature, final oil fill with the required amount of oil, or drain the water and the oil if the engine is to be shipped "dry". This sequence, or variations of it, can be performed automatically with controlled time intervals for each test or the test can be carried out manually.

If you write maker identify as IEN-11607

Balancing - Electronic machine reads dynamic unbalance in a rotor

Source: R. B. ANNIS COMPANY
1101 N. Delaware St., Dept. IEN, Indianapolis 2, Ind.



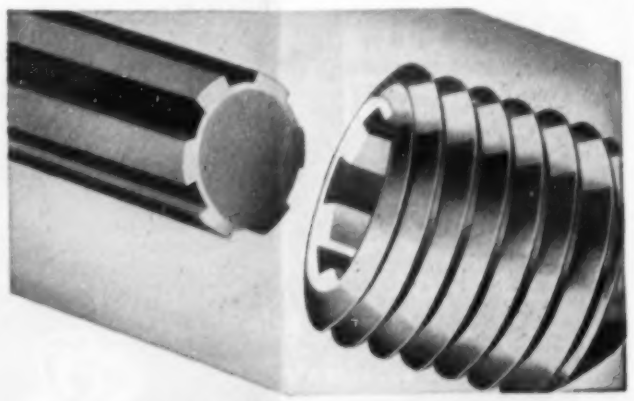
Model M2-S-44/U

Rotor assemblies, such as small motor blower wheels, from 2 to 8 in. in diameter and to 4 in. in width can be balanced dynamically on this new Under-Drive Moto-Blower machine. It represents an adaptation of the company's previously developed Model 8 Dynograph balancer. It is supplied with a motor drive unit equipped with electro dynamic braking, control switches, instruction book and standard accessories. Operation is on 110-volt 60-cycle ac.

A single motion places a work unit on the balancing fixture and, at the same time, engages the underside of the work with the drive belt to provide rapid acceleration to a constant test speed. The under-drive fixture requires no holding clamps, the work holding itself in place by its own weight. Amount and position of unbalance are determined by a single reading of the "trace" on a cathode ray tube scale.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11608



Hold Tight with Bristol's exclusive multiple-spline

• These flush-fitting set screws can be set tighter, easier, faster—wherever design considerations dictate. The added holding power of the multiple-spline lets you use fewer and smaller screws with no loss of strength. Withstand severe shock and vibration. Sizes: 0 wire to 1/2 in. diameter. Get them from your industrial distributor. Write for free bulletins showing applications. A-4.5

BRISTOL'S SOCKET SCREWS

THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Conn.

If you write maker identify as IEN-11609

THE costliest cutting tool IN YOUR PLANT-

CYCLONE TYPE for tool and general grinding, polishing, woodworking, plastics, glass, ceramics, etc.

FILTER TYPE for grinders, drills, lathes, surface grinders, etc.

No—it's not a tool of production—it's a tool of destruction! . . . it is ABRASIVE GRIT—by-product of your grinding, cutting and finishing operations.

Hammond DUSKOLECTORS

A MUST FOR DUST!

These units trap dangerous dust before it can harm the health and efficiency of your employees and damage valuable machinery . . . These two distinct types of Duskolectors offer the best and most economical solutions to your special dust problems. Hammond experience will help you too, in eliminating the dust menace . . . Write today for bulletin.

Hammond Machinery Builders INC.
3607 Douglas Avenue • Kalamazoo, Michigan

Hammond OF KALAMAZOO GOOD MACHINERY SINCE '89

See us at Booth 1142 — National Metal Exposition

If you write maker identify as IEN-11610

Norton covers the disc grinding range

with discs engineered to bring every application the

"TOUCH of GOLD"

Whatever your disc grinding requirements may be, Norton will meet them exactly — with discs engineered for coolest cutting action and longest, most productive service life.

Norton discs of ALUNDUM* and CRYSTOLON* abrasives are made in five types of bonds and all types of mountings. They are precision-built, for closest uniformity of grinding action from disc to disc and lot to lot. Which means you can always depend on getting the same top performance — next week, next month or next year.

See Your Norton Distributor for Norton discs that will add the money-saving "Touch of Gold" to every disc grinding job. Ask him for the new booklet "Disc Grinding." Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

Making better products . . . to make other products better

NORTON

and its **BEHR-MANNING** *division*

NORTON: Abrasives • Grinding Wheels • Grinding Machines • Refractories
BEHR-MANNING: Coated Abrasives • Sharpening Stones • Pressure Sensitive Tapes

W-1586 *Trade Marks Reg. U.S. Pat. Off. and Foreign Countries

If you write maker identify as IEN-11611

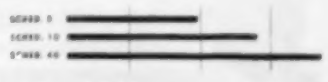
Be Wise!

LOOK AT ALL THREE when you need Stainless Pipe!

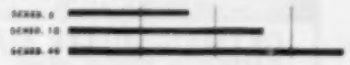
To get the most economical stainless pipe for handling corrosive fluids, Schedules 5, 10 and 40 should be closely compared for: • initial cost • installed cost • ease of handling • flexibility of assembly • flow capacity • adequate allowable working pressure • effective corrosion resistance • service life.

Whichever Schedule is best for your service conditions, Carpenter makes it in sizes up to 4 inches and in all AISI stainless analyses . . . plus Carpenter Stainless No. 20 Cb, and Carpenter Alloys B and C for super corrosion resistance. Adequate stocks are as close as your local distributor. Call him for information on your stainless pipe problems and time-saving delivery.

. . . compared in cost



. . . compared in weight

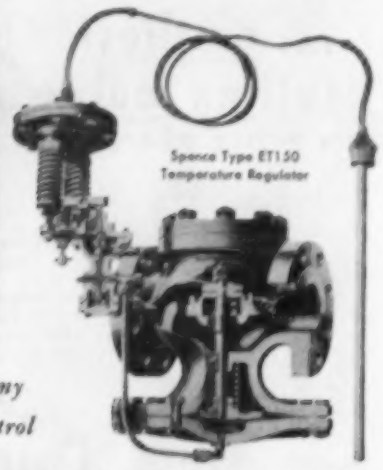


Send for this handy Pipe Bending Chart.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, New Jersey

If you write maker identify as IEN-11612

NO Reducing Valve Needed



Here's real economy in temperature control

Because Spence Temperature Regulators are designed to limit heater steam pressures to an adjustable maximum, the need for a separate reducing valve is completely eliminated.

This means one relatively small combination pressure and temperature regulator replaces a reducing valve of the same size and a larger temperature regulator. Practically the entire cost of the large separate temperature regulator is saved. And, the total saving would also include the cost of a 3-valve by-pass along with all labor for installation.

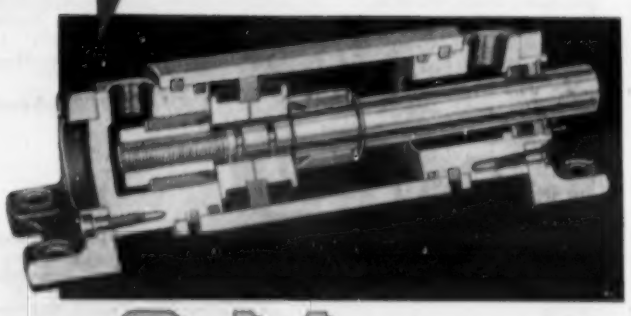
This design feature is just one of the reasons for the thousands of Spence installations throughout American industry. *For details of other important design features, write for Temperature Regulator Bulletin.* SE-137

SPENCE ENGINEERING COMPANY, INC. WALDEN, NEW YORK — Spence

If you write maker identify as IEN-11613

for improved

EFFICIENCY DESIGN APPEARANCE



choose O-M CYLINDERS (air • hydraulic)

Here's the cylinder made to order to meet industry's growing demand for machines that are more functional, cleaner-lined, less cumbersome. You don't sacrifice bore size in tight quarters when you specify O-M Air or Hydraulic Cylinders. *SPECIAL INTERLOCKING MECHANISM* does away with bulky tie rods, end caps . . . *saves up to ⅓ installation space!* Interlocking feature also provides perfect alignment, lower coefficient of friction which makes possible smoother performance at low or high speeds regardless of length of stroke. Easily removed, inspected, repaired. Completely interchangeable parts.

Available in full range of sizes (1½" to 8" bores) with standard, 2 to 1 or over-size rods. All steel construction with bearing bronze. *14-day delivery on most sizes.*

Write today for FREE catalog and complete set of ½ and ¼-scale templates showing all cylinders and mounting brackets.

MAIL COUPON NOW!

ORTMAN-MILLER MACHINE COMPANY
9 143rd Street, Hammond, Indiana

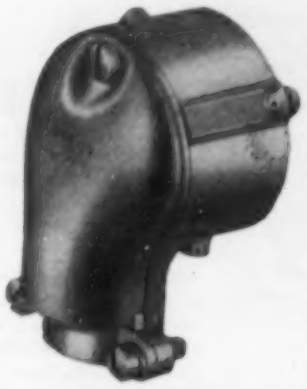
☐ Have representative call ☐ Send latest catalog
☐ Send ¼-scale templates ☐ Send ½-scale templates

Name _____ Position _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN-11615

Connector - Multi-contact plug and socket to conserve assembly space

Source: CANNON ELECTRIC CO.
3209 Humboldt St., Dept. IEN, Los Angeles 31, Calif.



Bulletin SR-KM1

Miniature "K" is a new multi-contact plug and socket particularly for use where space is limited as in electronic equipment. Available shell types include straight, 90 deg. and 45 deg. angles, all plug designs with integral clamps. Standard K02 box mounting and hermetically sealed receptacles with steel shells can be specified. The design is adaptable to potting. Barrel assemblies and end bells are ordered separately.

Contacts are copper alloy, gold plated. Current rating is 5 amperes. Insulators are nylon. Inserts are available in three sizes with 10, 20 and 30 contact arrangements.

If you write maker identify as IEN-11616

Drive - Variable pitch sheave and support bracket for upright drill

Source: SPEED SELECTOR INC.
118-W Noble Court, Dept. IEN, Cleveland 13, Ohio

Bulletin 48

Overall range is in a ratio of 9 to 1 for speed adjustment on a drilling machine when this new assembly of support bracket and the company's Model 6100 6-in. variable pitch sheave are employed. The bracket fits over and clamps on a 2¾ in. drilling machine column. The sheave then rides between the motor and the drill spindle. It is connected by two V-belts.

Moving the sheave toward or away from the motor, by turning the lever equipped bracket and then locking it, changes the pitch diameters in the two parts of the sheave assembly. No belt shifting is required. List price without the belts is $22.

If you write maker identify as IEN-11617

Now you can equip your polyvinyl chloride pipe lines with Saunders Patent diaphragm valves made of the same material by Hills-McCanna Co., 3025 N. Western Ave., Dept. IEN, Chicago 18, Ill. Sizes are ½ to 2 inches. Design includes operation by handwheel, lever, pneumatic pressure. Threaded ends are standard. Slip fit can be specified if required.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11618

For top quality lightweight castings turn to WELLMAN. You'll be sure of getting:

- An experienced manufacturer
- A product made under close laboratory control
- Competent designers to work with your engineers
- A wide range of specifications and alloys
- Production economy

Catalog No. 53 on request

Well-Cast MAGNESIUM, ALUMINUM AND BRONZE CASTINGS
Well-Made WOOD AND METAL PATTERNS

THE WELLMAN BRONZE & ALUMINUM CO.
Dept. 15, 12800 Shaker Boulevard Cleveland 20, Ohio

If you write maker identify as IEN-11619

SHELDON
CHICAGO U.S.A.

OFTEN PAYS OUT ON THE FIRST JOB...

and gives additional years of "cost free" service.

In the past, lathes were generally bought as large and as heavy as possible to insure accuracy and sufficient power. Now, with accurate, low-cost Sheldon Precision lathes, it is more profitable to buy these faster, cost-cutting lathes for the specific job at hand just as you would buy jigs and fixtures.

In savings of tooling costs, operator cost, power cost, and plant loading, as well as extra profits from more pieces per hour, Sheldon lathes often pay back their cost on a single run.

Sheldon lathes will work to the closest tolerances — have "Zero Precision" Taper Roller Bearings. They can take a healthy cut when operating at high speed direct drive—have double V-belts to the spindle. They will swing 10", 11" or 13" and have a 1⅜" hole through the spindle — have sufficient capacity for the great bulk of lathe work. Sheldon lathes have created a new factor for figuring machinery costs. They are tools you should know about.

Write for Catalog

SHELDON MACHINE CO., INC.
4208 North Knox Avenue, Chicago 41, Illinois

If you write maker identify as IEN-11620

GENERAL CONTROL PROMATIC TIMERS

PROMATIC ELECTRONIC TIMER

Type ETC with Back Plate
The ETC is available with or without back plate to meet *all* mounting requirements. Terminals may be located *either* in front or in rear of chassis. Large dial may be replaced by screwdriver control located in chassis. Bottom cover encloses chassis and protects internal components.

Write for Bulletin IN-600.

An electronic device which will control timed operations between 60 milliseconds and 60 seconds, and is adjustable to any fraction of this range. The use of ET Timers — which have been proven through years of service — will provide automatic control of industrial operations, equipment, and processes. Built to give dependable operation under the demanding conditions of both factory and laboratory, ET Timers operate from 115 v. a-c, 230 v. a-c, or from various d-c voltages. D.P.D.T. load contacts are rated at 10 amperes, 115 v. a-c, non-inductive.

FRAME	Back of panel or housing mounting	Chassis type mounting	Flanged for front mounting through a panel hole	Recessed or flush panel mounting	Mounted in place of housing Type D
Type No.	*ETB	*ETC	ETF	ETR	ETH
Cost	$40.00	$50.00	$45.00	$45.00	$47.00
*Back Plate for any of the above . . . add $1.00					

GENERAL CONTROL COMPANY
1200 Soldiers Field Road (Est. 1934) Boston 34, Mass.

If you write maker identify as IEN-11621

An improved bonding cement for brick and tile

Superior workability, greater economy, and longer pot life are integral components of COROBOND . . . an improved synthetic resinous bonding cement for brick and tile. Acid, alkali, and solvent-proof . . . COROBOND spreads easily, will not extrude from bottom courses, and provides high mechanical strength. Liquid and powder are supplied in proper ratio to insure a perfect mix every-time. Longer pot life eliminates waste when large batches are mixed.

For faster curing, complete adherence to brick or tile, and long-lasting wear resistance, specify COROBOND bonding cement.

Write today for literature

THE CEILCOTE CO.
CORROSION PROOF MATERIAL AND CONSTRUCTION
4840 RIDGE ROAD • CLEVELAND, OHIO

If you write maker identify as IEN-11622

NOW!

ONE TORCH HANDLES ALL YOUR JOBS!

AIRCO®

NEW AIRCO JET MIXER

completely stabilizes flame of the 800 Torch

NEW AIRCO 2800 CUTTING ATTACHMENT

for 800 Torch cuts steel up to 8" thick!

New Airco Jet Mixer provides perfect flame stability with all gas flows, within a welding and heating tip size range of 0 to 14 inclusive. Redesigned Airco 2800 heavy-duty cutting attachment takes Airco standard cutting torch tips . . . cuts steel up to 8" thick! Medium-duty attachment available for lighter service. Send for your free copy of Catalog 818—"Hand Torches for Cutting and Welding."

AIR REDUCTION
60 E. 42nd Street
New York 17, N. Y.

Divisions of Air Reduction Co., Inc.
Air Reduction Sales Co.
Air Reduction Pacific Co.
Represented Internationally by Airco Company International

Foreign subsidiaries:
Air Reduction Canada Limited
Cuban Air Products Corporation

at the frontiers of progress you'll find AIR REDUCTION PRODUCT

If you write maker identify as IEN-11623

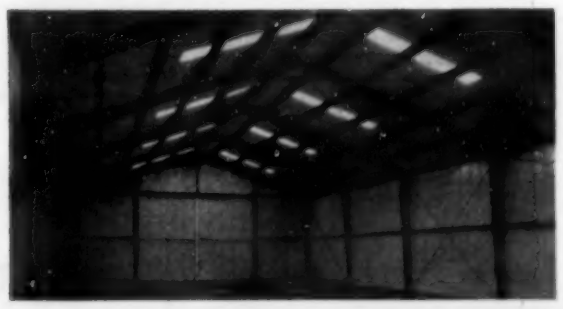
NEED MORE STORAGE SPACE?

Add a USF STEEL BUILDING

Costs Less Erected!

Easily Erected Single or Multiple

Easily erected—single or multiple U.S.F. 26′ and 30′ all-steel buildings go up in a hurry—cost less erected—thanks to the patented clip-and-wedge method that eliminates riveting, drilling or bolting to apply the sidewalls and roof. They are 100% salvageable when dismantled. All-steel construction throughout insures low maintenance and long life.



Heavy Duty 40′ Clear Span—No Columns

Full 14′ head clearance with no columns, U.S.F. Rigid-Frame all-steel buildings are special heavy duty design, available in any length in multiples of 20′, or two or more buildings may be joined together at the eaves. Choose from a variety of exterior wall panels designed to give you full flexibility for location of access doors, truck doors, window sash and solid panels.

USF® Manufactured from USS STEEL United States Steel

Write today for technical literature on this new USF 40′ building and companion 26′ and 30′ buildings.

UNITED STEEL FABRICATORS, INC.
WOOSTER, OHIO

If you write maker identify as IEN-11625

Signaling - Three phase instrument closes alarm circuit to warn of ground

Source: PARR MFG. CORPORATION
44 Austin St., Dept. IEN, Newark 5, N. J.

To forestall trouble

Brunt ground detector and alarm is a new three-phase instrument to be wired into an electric circuit and connected through a built-in relay to a signal circuit such as a bell or a horn. Three indicator lights, one for each phase of the circuit, are mounted in the face of the housing with a red bull's eye warning light, a fuse holder, a neon indicating light and a reset button.

One of the phase indicator lights will dim or go out and the other two will brighten when one of the phases becomes grounded. Simultaneously the red warning light will flash at about 20 times per min. and the relay will close the signal circuit. The signals will continue until the reset button is pressed to stop the audible signal. The red warning light changes from flash to a steady glow and remains so until the ground has been cleared.

The three indicator lights will resume their normal brightness when normal conditions have been restored to the circuit. Assembly is in a steel cabinet measuring 16 by 8 by 8 inches. Weight is about 14 pounds. Finish is gray crackle lacquer.

If you write maker identify as IEN-11626

Storing - Insulated steel cabinet protects papers from fire and impact

Source: DIEBOLD INCORPORATED
818 Mulberry Road S. E., Dept. IEN, Canton 2, Ohio

Bulletin AL-3831-254

Steel lining inside each drawer compartment of this new letter size steel filing cabinet adds to the cabinet's strength and seals insulation between it and the outer housing. Double bolts on each drawer provide holding power to withstand severe impact due to dropping through a burned out floor or due to contact with debris falling from above. A key lock is provided for all drawers of any combination. Individually locked drawers are recommended for specific uses.

The cabinet carries Underwriters' Laboratories Class "C" Insulated Record Container Label for safe protection of the contents for 1 hr. in temperatures to 1,700 deg., for impact test through a 30-ft. fall onto a solid bed covered with rubble and for continuing protection, after cooling, followed by exposure in an inverted position and reheating to 1,550 deg. F. for one-half hour.

External dimensions are about 17 by 31½ by 53¾ inches. Inside drawer dimensions are about 12¼ by 25½ by 10⅛ inches. Total filing depth per unit is 102½ inches. List prices start at $248.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11627

for ready reference

This B&W Technical Data Card gives Analyses of Standard Alloy Steels (based on A.I.S.I. and S.A.E. requirements). Send for TDC176.

TA-4072(LP)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing, Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN-11628

BROWNHOIST BETTER

● BUY DIRECT FACTORY

● ROPE REEVE, LINK TYPE

● WRITE FOR CATALOG

BUILDS BUCKETS FROM FOR LESS POWER WHEEL

INDUSTRIAL BROWNHOIST CORP.
BAY CITY, MICHIGAN

156

If you write maker identify as IEN-11629

A USG GAUGE for every purpose

Rugged, dependable gauges with enduring accuracy . . . in every price class.

● IMMEDIATE AVAILABILITY—USG maintains the world's largest stock of standard gauges—over 200,000 in all types, sizes and ranges.

● EVERY SPECIAL REQUIREMENT—USG maintains the most complete line of stocked gauge components to economically handle on a large volume basis, all special requirements for any pressure sensing and actuating need.

● USG is the largest gauge manufacturer in the world. Its facilities are economically integrated for large volume, quality controlled production, permitting better gauges at competitive prices.

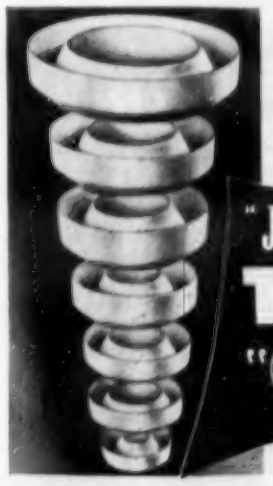
Consult USG first for all your standard and special gauge requirements.

UNITED STATES GAUGE

Gauge Headquarters for over 50 years

United States Gauge, Division of American Machine and Metals, Inc., Sellersville, Pa.

If you write maker identify as IEN-11630



Most Effective Seal Against ANY Corrosive Liquid or Gas!

"JOHN CRANE"* TEFLON "C-V" rings

"John Crane" offers a full line of standard size Teflon "C-V" Rings or can mold special sizes to fit your stuffing box requirements.

Send for catalog on "C-V" Rings and other Teflon products

IN CANADA: Crane Packing Co., Ltd., 617 Parkdale Ave., N., Hamilton, Ont.

This latest development in packing is chemically inert and withstands any corrosive liquid or gas as well as temperatures from −94°F. to 482°F. "John Crane" Teflon "C-V" Rings also have unusually low friction resistance—will not shrink, swell, harden, dissolve, corrode or deteriorate. Cross-section design allows effective sealing at low gland pressure. Ideal for use on all valve and reciprocating pumps as well as many centrifugal and rotary pump applications.

Crane Packing Co., 1815 Cuyler Avenue, Chicago 13, Ill.

*DuPont's trademark

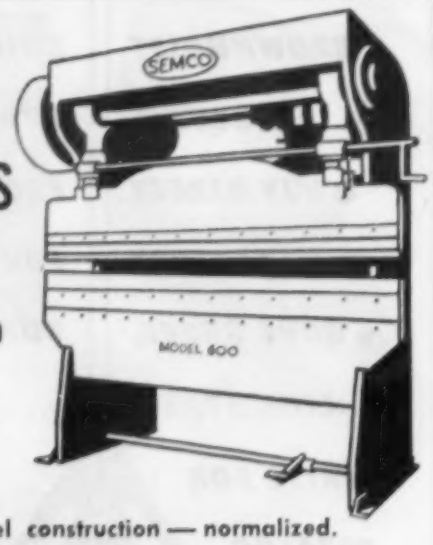
JOHN CRANE CRANE PACKING COMPANY

If you write maker identify as IEN - 11631

NEW PRESS BRAKES

in four sizes 6', 8', 10' and 12' 30 to 60 ton.

• LOW PRICED • BIG PRESS FEATURES



- All steel construction — normalized.
- Ball and Roller Bearings throughout.
- Fine adjustment of ram.
- Heavy pitmans with buttress threads.

Made by the makers of famous SEMCO "35 YEAR" BRAKE DIES.

Write for NEW color folder and prices of PRESS BRAKES and 26 standard BRAKE DIE designs. Send die specifications for estimate.

SEMCO

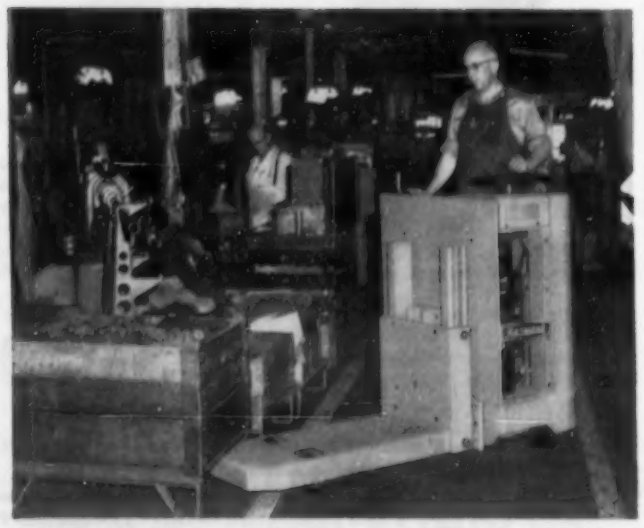
SERVICE MACHINE CO., INC.

200 Miller Street • Elizabeth 4, N. J.

If you write maker identify as IEN - 11632

FIRST TIME

An electric truck made expressly for the production floor



MODEL EL4P Cap. 4,000 lbs. Patent No. 2,564,002

RAYMOND LOW-LIFT

PLATFORM ELECTRIC TRUCK

SAVE SPACE, SPEED WORK on your production floor with the RAYMOND Low-Lift Platform Truck. This compact truck actually operates in 5-ft. hand truck aisles . . . positions work-in-process right at machines.

RAYMOND LOW-LIFT lets you store stock in central location . . . serve 2 to 4 production areas with one man and one truck. Result: you save manpower, speed up the flow of materials, free floor space for more men and machines. RAYMOND Low-Lift travels up to 5½ mph loaded, up to 6 mph empty.

USE THIS TRUCK in the warehouse and on the shipping dock too . . . it maneuvers with ease inside boxcars, truck trailers. The Low-Lift's light weight permits safe use on low-capacity elevators and floors. Truck is equipped with new RAYMOND power unit that opens up like a book for fast, easy servicing. Exclusive load wheels provide more bearing surface, less wear on floor, easier pallet entry.

The RAYMOND CORPORATION

3534 Madison St., Greene, N.Y.

( ) Please send latest Bulletin on Low-Lift Platform Electric Truck.

( ) Please have RAYMOND representative call.

NAME _____ TITLE _____

COMPANY _____

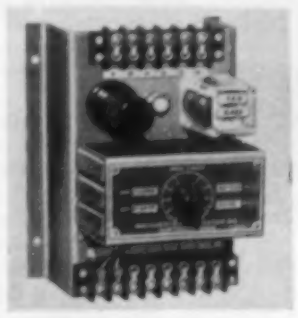
STREET _____

CITY _____ STATE _____

If you write maker identify as IEN - 11634

Timing - Electronic relay actuates contacts after delay interval

Source: MACHINERY ELECTRIFICATION INC.
35 Hudson St., Dept. IEN, Northboro, Mass.



Catalog on request

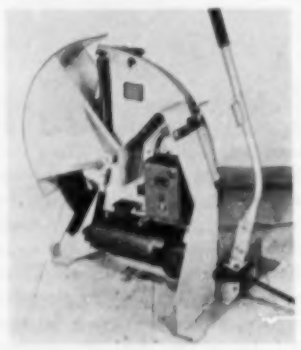
Type MEK-2110 is a new electronic time delay relay that has been designed for interval timing and time limiting operations as on heat treating machines, molding machines, machine tools. Open and enclosed assemblies are available as well as remotely adjustable units. Two or more can be connected together for complex timing sequences.

Two timing ranges are from 1.5 to 120 sec. and from 0.75 to 60 seconds. The double-pole double-throw load contacts are rated at 5 amp. on 110-volt ac. Repetitive accuracy, based on constant line voltage, is within 2 per cent. The load contact can be de-energized during reset and timing and then energized when timed out, or they can be energized during reset and de-energized during timing and then energized when timed out. The sequences are set by interchanging terminal strip connections.

If you write maker identify as IEN - 11635

Strapping - Motor driven reel to dispense steel strap from a coil

Source: ACME STEEL CO.
2840 Archer Ave., Dept. IEN, Chicago 8, Ill.

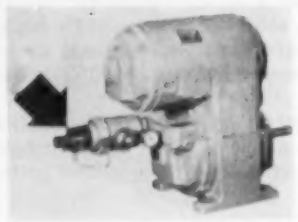


Model E24AO

Feed rate is 250 fpm. for this new motor driven dispenser. It takes a coil of steel strap measuring ¾ to 2 in. in width, feeds it out when a lever is operated. A magnetic brake prevents over-running the set length. Shear blades employed in the lever operated cut-off can be resharpened on a surface grinder. Operation is on 220 or 440-volt three-phase 60-cycle ac.

If you write maker identify as IEN - 11636

Control air from an instrument can be employed to alter the output speed of the Speed-Trol variable speed drive when it is equipped with a Conoflow pneumatic controller. The complete drive unit is available from Sterling Motors Inc., 5401 Telegraph Road, Dept. IEN, Los Angeles 22, Calif. Manual and automatic types can be specified to meet requirements.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11637

"Our Magcoa Dockboard speeds loading . . . pays for itself"

Says James Johnson, Vice President, J. W. Johnson Company, canvas goods manufacturers, Bellwood, Ill.

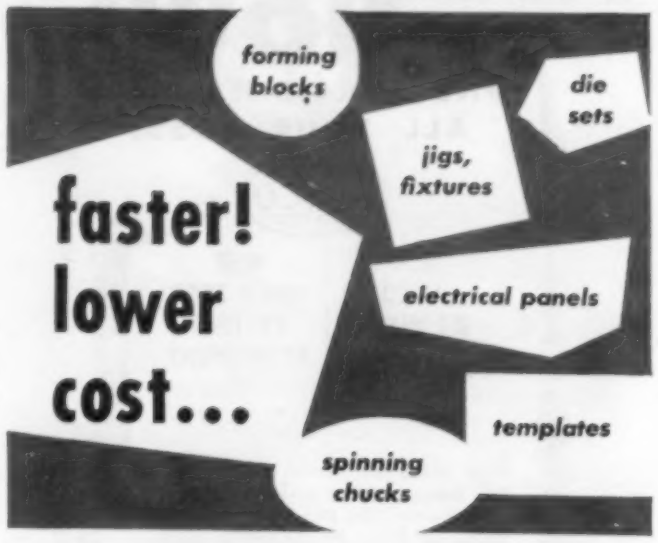
"When we switched from heavy, makeshift steel plate to an engineered-for-us Dockboard, we chose Magcoa," says Mr. Johnson. "Our Magcoa Dockboard can be positioned quickly and easily by one man," he continues, "and when it's in position, *its safety angle holds it there.* Our powered equipment and operators handle loading and unloading in record time, and are then free for other handling jobs throughout the plant. We figure," says Mr. Johnson, "that our new Magcoa Dockboard will quickly pay for itself."

Speed *your* loading and unloading . . . send for our amazingly frank Dockboard Facts File. It tells the Magcoa Dockboard story . . . and the story behind the story.

MAGNESIUM COMPANY OF AMERICA

MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN - 11638



with MASONITE BENELEX® "70"

Easy to cut and shape these dense, but lightweight panels. 4' wide—3', 6' and 12' lengths. Thicknesses from ¼" to 2". Write for fact-filled brochure.

PRESDWOOD WOOD MADE BETTER

NATURALLY STRONGER WITH LIGNIN

MASONITE® CORPORATION

Dept. IEN-10, Box 777, Chicago 90, Ill.

"Masonite" signifies that Masonite Corporation is the source of the product

If you write maker identify as IEN - 11639

It's here . . . the sensational

NEW DUMORE® AUTOMATIC DRILL UNIT

The most complete unit for its size and capacity on the market today!

- Easy mounting in any position.
- Built-in controls for manual, semi-automatic and automatic operation.
- Positive, no-slip spindle drive with ten selective spindle speeds.
- Economical low-air-volume operation.
- Air and hydraulic systems completely separate—easy maintenance.
- Keeps tooling simple — tooling costs low.
- Individual unit control provided in multiple unit setups — for rapid tool changes or job conversions.
- When mounted on standard drill press column, the unit becomes a self-contained, automatic drilling and tapping machine.
- Full 3" stroke with depth adjustment to within ± .001".
- Built-in auxiliary circuits for automatic activation of transfer equipment, indexing fixtures, other drill units for sequence operation in multiple setups.

PLUS these optional accessories:

- DUMORE REPEAT CYCLE TIMER—for automatic stage drilling and tapping of deep holes.
- DUMORE HYDRAULIC CONTROL (optional) . . . for quick insertion or removal.

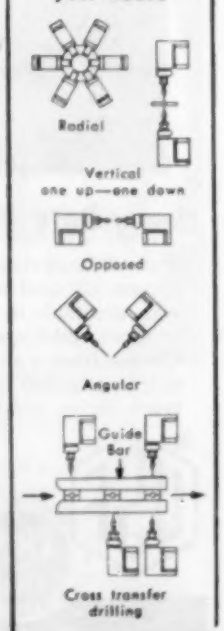
SPECIFICATIONS:

DUMORE AUTOMATIC DRILL UNIT

WIDTH: approx., 9½" • HEIGHT: approx. 15" • LENGTH OVERALL: (incl. chuck), 24" • WEIGHT: (incl. motor) approx., 88 lbs. • FEEDS: adjustable from 25 to 400 lbs. thrust • RAPID APPROACH RATE: Adjustable up to 600-in. per min. (Distance adjustable from 0" to full stroke.) AVAILABLE MOTORS: ⅓ or ½ HP; constant speed, continuous duty.

Get all the details! Send for descriptive bulletin today!

Mount the Dumore Automatic Drill Units to fit your needs



DUMORE PRECISION TOOLS®

RACINE, WISCONSIN

If you write maker identify as IEN-11641

SAVE VALUABLE PLANT SPACE

High Pressure, Reverse Jet filter cleaning gives you the dust filtering service your plant requires with fewer filter tubes. No shut downs for cleaning are necessary and no section of filters are shut off periodically for rapping. Fewer filter tubes take up less plant space, installation is 50% faster and maintenance is lower. *Investigate—See what DAY High Pressure, Reverse Jet Multiple Tube Dust Filters can do for you.*

WRITE FOR BULLETIN 528-R

(Licensed By H. J. Hersey Jr.)

Reverse Jet Blow Ring travels up and down filter tube continuously. Only High Pressure, Reverse Jet Filter Cleaning gives continuous filter operation. Maximum service from minimum filter.

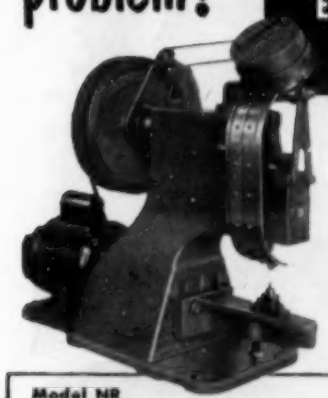
Self-Adjusting Blow Rings assure perfect ring to cloth contact. This DAY feature is a major improvement for higher dust filtering efficiency.

The DAY Company
813—3rd Ave. N.E., Minneapolis 13, Minn.
In Canada: The DAY Company, Ltd., Ft. William, Ont. Branch Plants in Buffalo, Ft. Worth and Toronto, Ont.
Representatives in Principal Cities
DAY SINCE 1881

If you write maker identify as IEN-11642

Solves any eyeleting problem!

Edward Segal
AUTOMATIC EYELET ATTACHING MACHINERY



Whatever the size and the materials there's an Edward Segal precision-built machine to do a cost reducing, time saving job on your eyeleting assembly . . . For single or multiple settings. Interchangeable raceways, rams and tool holders give these machines amazing versatility. In constant use in hundreds of plants in all fields.

Submit your specs to us for analysis without obligation, and write for our interesting booklet loaded with eyelet setting data — Bulletin M-50.

Model NR
Bench Type *(Illustrated)*
Stroke 2¾". Depth of throat (end ram to frame) 7¾". Adjustable horn provides ample space for special feeds, fixtures and indexing mechanisms.
Model XNR same as above for hand-feed staking operations, 1½ & 2 ton capacity.

EDWARD SEGAL • 72 SPRING STREET • NEW YORK 12, N. Y.

EDWARD SEGAL EYELET ATTACHING MACHINERY
SPECIAL HOPPERS AND FEEDING DEVICES

If you write maker identify as IEN-11643

New TO CUT YOUR COSTS!

Select the drive that *REALLY FITS* — no larger — no smaller — from the *NEWEST* most *COMPLETE LINE* of Herringbone Reducers Available Anywhere.

CAPACITIES UP TO 1950 HORSEPOWER

W. A. JONES FOUNDRY & MACHINE CO.
4469 Roosevelt Road, Chicago 24, Illinois

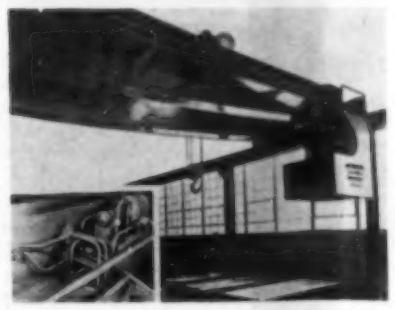
Our NEW Herringbone Speed Reducer Catalog No. 100 is available from your local Jones Representative, or write directly to us. This new approach to speed reducer cataloging is specially designed to help you select with accuracy and confidence the correct Herringbone Gear Drive for your specific application.

Jones *Better Drives . . . Since 1890*

If you write maker identify as IEN-11644

Crane - Traveling bridge design employs hydraulic drive for the bridge

Source: OVERBEKE-KAIN COMPANY
20961 Aurora Road, Dept. IEN, Bedford, Ohio



Built to order

Hydraulic drive, for the bridge travel on this new crane, replaces the customary motor and mechanical braking equipment. A motor drives a Vickers pump to power hydraulic motors connecting directly to the bridge wheels. Positive steady acceleration to rated travel speed is provided in either direction and and equally steady decceleration to lock against rotation as soon as the bridge is brought to a stop. Control centers at a valve station in the crane cab beside the conventional electric controls for the carriage travel on the bridge and the electric hoist movements.

The crane, shown in the illustration, is a 15-ton two-carriage assembly, each carriage hook rating 7½ ton. It is built on a 68-ft. span. It is representative of the line which includes ratings to 50 ton.

If you write maker identify as IEN-11645

Welding - Portable spot machines rate to ¼ inch, thyratron control

Source: AMPOWER PRODUCTS CO.
10207 S. Ridgeland Ave., Dept. IEN, Oaklawn 70, Ill.

Please note our error

We call your attention to our error in the address for Ampower Products Co., in IEN-8449-54. We placed the company in Oakland, Ill., when we should have written Oaklawn, Ill. The welder is the new Series 5400, 110 or 220-volt ac.

If you write maker identify as IEN-11646

Separating - Vacuum pump unit extracts water, also silences exhaust

Source: BURGESS-MANNING COMPANY
741 Park Ave., Dept. IEN, Libertyville, Ill.

First of its kind

Type WSS Water Separator Snubber is a new unit for the exhaust line from a water sealed vacuum pump. Water and air enter the side connection to the housing. They are separated centrifugally and the air is discharged at the top. The water flows out at the bottom. Sizes are 6 to 26 in. in diameter. Weight is 8 to 415 pounds. Capacity is 60 to 4,700 cfm. Silencing action brings noise to ear comfort level.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11647

convert AC to DC power!

Closely Regulated Voltage . . . with the NEW MAGNETIC AMPLIFIER • SELENIUM RECTIFIER

VICKERS regulated DC POWER SUPPLIES

in Complete, Self-contained Units

- 5 KW to 50 KW MODELS
- REGULATED ±1%
- TUBELESS
- HIGH AMBIENT TEMPERATURE OPERATION From sub-zero to 122°F (50°C)

AC INPUT
230 volts, 3 phase, 60 cycle
460 volts, 3 phase, 60 cycle

DC OUTPUT
Voltage: 125 volts or 250 volts (either voltage obtainable by simple internal reconnection)
Control potentiometer for adjusting DC voltage

Write TODAY for Bulletin

VICKERS ELECTRIC DIVISION
VICKERS Inc.
a unit of the Sperry Corporation
1811 LOCUST ST. • ST. LOUIS 3, MO.

If you write maker identify as IEN-11648

AIM for preset tension on your steel strapping

Acme Steel offers the only complete line of PNEUMATIC STRETCHERS

These new time-saving Acme Steel Strapping Tools can be set in advance for uniform, consistent tension. There's no guesswork. The Pneumatic Stretchers do the work—reducing employee fatigue. There are Acme Steel Pneumatic Stretchers for tensioning strapping on all sizes and shapes of containers, packages and bundles . . . and a model to suit your needs. For details, write Acme Steel Products Division, Dept. KL-104, Acme Steel Company, 2840 Archer Avenue, Chicago 4, Illinois.

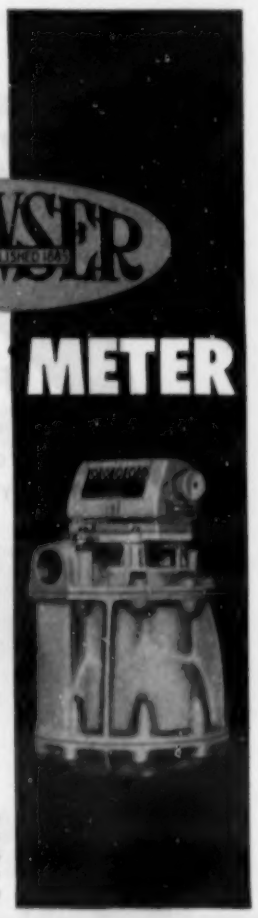
AIM *for Safe, Lower-Cost Shipping* ACME STEEL

If you write maker identify as IEN-11649

IF YOUR AUTOMATION PROGRAM INCLUDES LIQUID MEASURING . . .

Start with a BOWSER

XACTO METER



"—the world's most widely used meter!" Wherever liquid has to be measured, Bowser XACTO meters have proved to be accurate and dependable in all kinds of industry.

Today over 856 different types of liquids are safely handled by Bowser XACTO meters. Chances are they could be your answer to increased production and substantial reductions in operating costs.

Write TODAY for complete XACTO data!

BOWSER, INC.
1338 Creighton Ave.
Fort Wayne 2, Ind.

REGIONAL OFFICES: SALES OFFICES—ATLANTA • CHICAGO • CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES • NEW YORK • PITTSBURGH • SAN FRANCISCO • HAMILTON, ONTARIO

If you write maker identify as IEN-11650

STURTEVANT MICRONIZER* GRINDING MACHINE

Grinds Materials To Any Micron Size Specification

NOW AVAILABLE FOR OUTRIGHT SALE

24" Size Capacities 1000 to 1200 lbs. per hour

The Sturtevant *Micronizers* are fluid jet grinding machines designed to reduce solid materials to particle sizes in the micron range.

Using compressible fluids, air or steam, as the source of energy, *Micronizers* produce pulverized materials to specifications unobtainable by other mechanical equipment such as ball, pebble or hammer mills.

The variety of materials processed is large and includes both nonmetallic and metallic minerals and ores, metals, pigments, insecticides, fungicides, pharmaceuticals, plastics, dyes and numerous other organic and inorganic products.

It is quickly and easily cleaned on changes of formulation with minimum loss of material. Simple to install and operate. It is available as a machine alone . . . or as a complete grouping with premixing, grinding and bagging equipment. Write for complete information, today.

*Micronizer is the Registered Trademark of the Sturtevant Mill Company.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 22, MASS.
Designers and Manufacturers of CRUSHERS • GRINDERS • SEPARATORS CONVEYORS • MECHANICAL DENS and EXCAVATORS • ELEVATORS • MIXERS

If you write maker identify as IEN-11651

If you write maker identify as IEN-11652

The booklet illustrates the three principal types of bearings used in motors – cartridge, one-side lubrication and Lubriflush – with explanations of the functions of each. For demonstrating the action of re-lubrication in the U. S. Lubriflush bearings, a transparent bearing housing is dramatically illustrated by a series of natural color photos. This informative educational booklet, edited by lubrication engineers, is full of startling facts you should know. Write today for a complimentary copy. Simply fill in the Coupon below.

U.S. ELECTRICAL MOTORS Inc.
Los Angeles 54, Calif. • Milford, Conn.

U.S. MOTORS

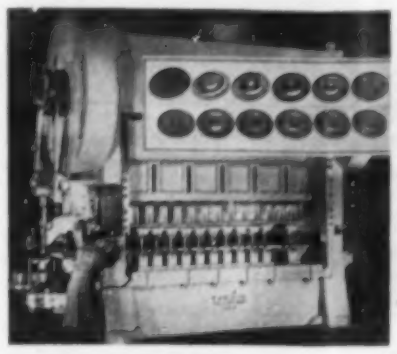
REQUEST FOR LUBRIFLUSH BOOKLET

U. S. ELECTRICAL MOTORS Inc. IE-10
P. O. Box 2058, Los Angeles 54, Calif.
or Milford, Conn.
☐ Lubriflush Booklet #1848
Name
Company
Address
City Zone State

If you write maker identify as IEN-11654

Press - Double crank, twin drive, has transfer feed to thirteen stations

Source: E. W. BLISS COMPANY
1375 Raff Road S. W., Dept. IEN, Canton 10, Ohio



For specified tooling

Illustrated is current design of the company's straight side double crank twin drive press, previously developed for application with a transfer feed in a production line. The press is driven by a 50-hp. motor. It mounts a 120 by 48-in. bed and takes multiple tools at thirteen stations. Speed can be varied from 14 to 28 spm.

The tooling, employed in the set-up shown, takes a 5-in. blank, puts it through six successive draws, flanges it, irons a ¾-in. cup, restrikes the flange, pierces 10 holes, lances four locating tabs and trims the part to final diameter. Drive is by a high speed single disc air clutch. Safety switches stop operation if a supply of blanks does not come into position. They also prevent double blanks from reaching the dies in the transfer feed line.

If you write maker identify as IEN-11655

Machining - Cemented carbide for AISI 4150 forged steel auto axles

Source: CARBOLOY
11167 E. 8-Mile Road, Dept. IEN, Detroit 32, Mich.

Technical data upon request

Grade 350 is a new addition to the company's line of metal cutting carbides. It is suited particularly to machine truck axles made of AISI 4150 steel forgings. The operation consists of machining the front and back faces of the part toward the brake drum, the outside diameter for the flange and the bearing and spline diameters. The work starts with the rough forgings. Machine speed is 200 fpm. on the 2-in. diameter, 400 fpm. on the 4-in. diameter. The tools are insert type, mechanically held.

If you write maker identify as IEN-11656

Travel, steer and lift controls are mounted on the platform in a new arrangement of the Hi-Lift "walkie" electric truck made by Barrett-Cravens Co., 628 Dundee Road, Dept. IEN, Northbrook, Ill. The truck is designed for use in stock rooms in which the operator must reach into high as well as low shelves. It replaces a previous two-man operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11657

A PAID NEWS ADVERTISEMENT BY BURNDY ENGINEERING CO., INC.

WIRE-MIKE takes guesswork out of wiring

- pocket size, 4½" closed, 2 oz. weight
- heavy-gauge stainless steel
- inside and outside caliper, calibrated in 32nds
- precision-etched direct reading scales
- pipe size to i. d. conversion table
- genuine leather sheath

Frankly, we never intended to get into the WIRE-MIKE business. Our engineers designed WIRE-MIKE as a labor of love—because they felt such a tool was long overdue. We made several hundred for our friends, and thought we had heard the last of it. Not so. Before you could say "WIRE-MIKE," we were snowed under with demands for this handy gadget. Since our distributors knew we couldn't keep **giving** them away, they asked us to put WIRE-MIKE into production at a nominal price. A few improvements make WIRE-MIKE better than ever—now everyone can have this famous precision lifetime tool for instantly measuring **conductor size** (stranded, solid or ACSR), **conduit size** (rigid or thinwall), and **pipe size.** Only $1.95 at your Burndy distributor.

54-20

BURNDY ENGINEERING COMPANY, Inc. • NORWALK, CONNECT.

If you write maker identify as IEN-11658

. . . Sarkes Tarzian Centre-Kooled Selenium Rectifiers give years of trouble-free, maintenance-free service. Write for complete information.

Sarkes Tarzian, Inc., Rectifier Division
DEPT. B-5, 415 N. COLLEGE AVE., BLOOMINGTON, IND.
In Canada: 700 Weston Rd., Toronto 9, Tel. Murray 7535
Export: Ad. Auriema, Inc., New York City

Sarkes Tarzian "Centre-Kooled" SELENIUM RECTIFIERS

If you write maker identify as IEN-11659

- Write for booklet N1 — tells the "inside story" of stopwatches. Illustrates patented spare parts compartment. Shows what to look for in a timer. Complete, thorough, interesting. Must reading for users of stopwatches.
- Brand new Clebar catalog . . . illustrates and describes more than a score of stopwatches and chronographs for every timing purpose. Write for your copy today!

CLEBAR WATCH AGENCY · 521 Fifth Ave., N. Y. 17

If you write maker identify as IEN-11660

OIL YOU CAN SEE . . . IS WASTE YOU CAN STOP!

Stop waste WITH

HOUGHTON E. P. TREATED STA-PUT LUBRICANTS

. . LESS OIL . . . LESS OFTEN! Houghton Sta-Put Lubricants *stay put* where they're needed—cling tightly to metals—offer extraordinary adhesion. They give you film strength many times higher than that of ordinary lubricating oils. They keep your equipment running longer . . with greater safety . . . on less! Write for data on "Sta-Put" Oils and Greases, to E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

STA-PUT LUBRICANTS
. . . products of **HOUGHTON & CO.**
PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO
Ready to give you on-the-job service . . .

If you write maker identify as IEN - 11661

AIR POWERED WORK FEEDER

The Bellows TRANSFEED is a two-position work feeder, air-powered, but low-voltage electrically controlled. Complete packaged unit with valve and operating controls built-in. 6" positioning stroke. Fast, positive, accurate.

Write for Bulletin 740A
Address Dept. IEN 1054.

The Bellows Co.
AKRON 9, OHIO

If you write maker identify as IEN - 11662

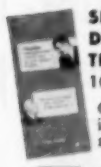
You Can Finish any Metal
BETTER for LESS
with
VINSYNITE PRETREATMENT

BETTER . . . because Vinsynite combines a chemical pretreatment with a thin film of organic coating. Result is superior adhesion and corrosion-resistance.

FOR LESS . . . because Vinsynite can be applied by ordinary painting methods. No expensive chemical control, heating, water baths or special equipment is required.

Vinsynite works efficiently on any metal. It makes finish coats last longer. Let us send you specific test data and case histories to prove it!

Effect of 500 hrs. ASTM salt spray on oleoresinous paint over bare steel (left); and same paint over Vinsynite (right).

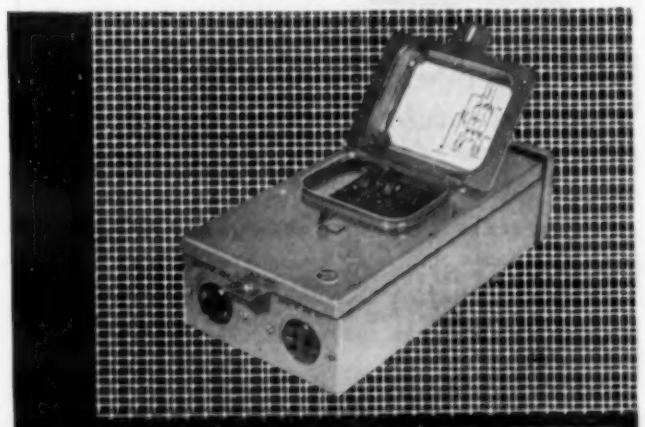


SPECIALTY COATINGS, INC.
Division of
THOMPSON & COMPANY
1000 Allegheny Ave., Oakmont, Pa.

GET THIS FREE BOOKLET. It tells how Vinsynite is solving paint adhesion and corrosion problems for many manufacturers.

Vinsynite
COMBINES PROTECTION AND ECONOMY

If you write maker identify as IEN - 11663



OUTDOOR SERVICE UNIT
. . . with wired-in receptacles

Here's a portable, fully protected outdoor service unit with wired-in receptacles for tools, pumps, floodlights and other equipment. Used for construction work and other outside installations which require temporary circuits, the "Receptacle-Type" Outdoor Service Unit employs **HEINEMANN** hydraulic-magnetic circuit breakers. Move it from job to job—the only connections needed are those directly to the line. Current capacity of the unit is unaffected by summer and winter temperature extremes. After tripping on short circuits or overloads, service can be restored immediately if the fault is corrected. No waiting is required.

Housed in rugged, weatherproof enclosure, with plug-in receptacles at bottom for either or both 220 and 110 volts, AC. The unit is complete in itself—no other enclosure is needed.

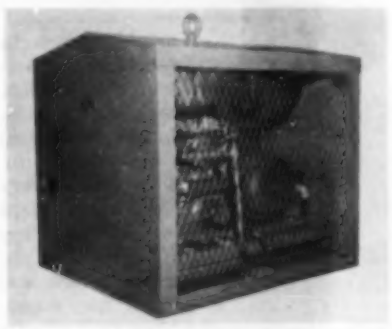
WRITE FOR BULLETIN 2013

HEINEMANN ELECTRIC CO., 150 Plum St., Trenton 2, N. J.

If you write maker identify as IEN - 11664

Refrigerating - Air-cooled unit to remove heat from process liquids

Source: AMERICAN INJECTOR CO.
1000 E. McNichols Road, Dept. IEN, Detroit 3, Mich.



An EKLO design

Coolants employed in machining, grinding, honing, quenching, as well as hydraulic oils and cooling liquids for jacket duty in die casting machine, plastic molding machines, welding equipment, can be maintained at a desired temperature by application of this new air-cooled Freon refrigerating equipment. It is available in five sizes rating ½ to 2 ton of refrigeration. Capacity is 6,200 to 24,000 btu. at 90 deg. ambient temperature and 45 lb. pressure.

The compressor is driven by a ½ to 3-hp. motor. Recommended flow rate is 10 to 30 gpm. for the liquid being handled. The liquid connects into and out of a large diameter insulated coil designed for low pressure drop and to prevent settling. The coil drains out when the liquid pump is stopped. The equipment is enclosed in a cabinet that lifts off for quick access to the operating mechanisms.

Operation is on 220 or 440-volt 60-cycle ac. Inlet and outlet connections measure ¾ to 1¼ inches. Dimensions range from 19 by 24 by 29 in. to 34 by 41 by 40 inches.

If you write maker identify as IEN - 11665

Control - Electronic instrument for use in time temperature programming

Source: WEST INSTRUMENT CORP.
525 N. Noble St., Dept. IEN, Chicago 22, Ill.

Bulletin JG-1

Series JG is a new program control instrument in the company's Gardsman line of electronic equipment. It provides for automatic repeat performance of a preset time-temperature cycle. It also permits scheduled secondary functions. The instrument is available for control in "off-on", "proportioning" and "high limit" or stepless action. The secondary control permits the user to stop or start the cycle at a predetermined time or to operate auxiliary equipment such as stepping relays, timers, additional heating capacity, blowers, alarms, warning signals, at any point in the cycle.

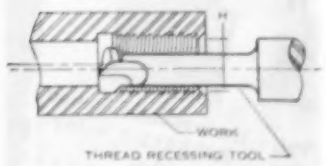
Current, generated by a thermocouple, actuates a millivoltmeter to control the indicating pointer. A setting arm, carrying the setting pointer, is moved along the scale by the controlling cam which is driven by a synchronous motor. Control is obtained through the use of a flag on the indicating pointer. This flag interrupts a light beam between a photoelectric cell and a light source mounted on the setting arm. Output from the cell is amplified magnetically. No warm up interval is required since the mechanism requires no vacuum tubes.

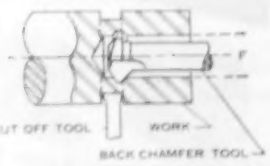
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11666

Now FINISHED RECESSING TOOLS FROM STOCK

Instead of having the required tool made on a custom-made basis, it comes to you as one of a standard line production, thereby satisfies immediate needs and brings added economies to your tool purchases and tool operations. Both types of recessing tools available in H.S. Steel and Carbide-tipped.





THREAD-RECESSING TOOLS

To obtain perfect threads in blind holes, you can now purchase from stock, Standard Bokum Thread-recessing tools for most thread sizes.

These tools allow run-over with your threading tool or tap, insuring perfect threads to the full depth of hole and produce perfect fit for threaded stud.

BACK-CHAMFERING TOOLS

It is always desirable to back-chamfer a finished bore before cutting-off tool goes into action, to assure a cleaner, easier cut-off without throwing up burr.

The shank diameters and lengths of these new tools conform to standard sizes of screw machine tool holders.

The tools are radial and helical backed-off, with built-in clearances following the same design that typifies all Bokum tools. Buy them in assortments of 12 put up in convenient wooden boxes.

For thread-recessing, send for Cat. Sheet N-T.R.; for back-chamfering, Cat. Sheet N-B-CH.

BOKUM TOOL CO. 14775 Wildemere Ave., Detroit 38, Mich.

If you write maker identify as IEN - 11667

Automatic room temperature control

for as little as $29.50 per station

● Fulton Sylphon offers a simple, packless, bellows-powered valve which automatically holds a constant temperature in the rooms it controls. The half-inch size sells for only $29.50, list. Valve Number 885 in the extensive Fulton Sylphon line is designed for exposed radiators. A companion valve, Number 895, is designed for concealed radiators or convectors. These valves are simply and inexpensively installed in either new or existing steam heating systems. For complete information, write for Bulletin TN-80.

Robertshaw-Fulton
CONTROLS COMPANY
FULTON SYLPHON DIVISION • KNOXVILLE 1, TENN.

If you write maker identify as IEN - 11668

WITH
STAINLESS STEEL
CHICAGO FLOATS

It just doesn't make sense to go on putting up with floats that may collapse when for a few cents more you can have the full protection of Chicago Stainless Steel Floats. They're stronger, tougher, resist corrosion better, giving you many years of day-in day-out service. Wide range of shapes and sizes are available with many types of spud connections. Check with us today toward permanently ending your float worries.

Send for complete bulletin on styles, sizes, shapes, spud connections and recommendations.

CHICAGO FLOAT WORKS
2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 11669

Only 90 seconds to drill 3½" holes through 4" concrete slab with TRUCO WATER SWIVEL and TRUCO SWIVEL DIAMOND DRILL BITS

This combination can drill at high speed in hardest aggregates with only 150 lbs. pressure and ½" H.D. motor as against 1,000 lbs. pressure and 1"-1¼" H.D. motor specified for other tools. Truco combination can drill *reinforced concrete;* amazing drilling speed in brick, granite, ceramic tile, marble. Truco Water Swivel and Truco Swivel Diamond Bits can easily pay for themselves on your first job. Write for folder:

WHEEL TRUEING TOOL COMPANY
54-3200 West Davison Avenue • Detroit 38, Michigan

If you write maker identify as **IEN-11670**

NEW McGILL® sealed GUIDEROL® full type roller bearing

REPLACES COSTLY INSTALLATIONS OF NEEDLE BEARINGS AND SEPARATE SEALS

Dependable GUIDEROL Bearings are now available in a new series that incorporates single or double seals without any increases in overall bearing width. It's the first sealed unit to replace ordinary needle bearings having auxiliary sealing arrangements. Housings can be less complicated and smaller with less machining.

Complete with commercial lip type seals, the new unit costs very little more than standard bearings for shaft sizes of ⅜" to 2 inches. Five seal combinations increase application possibilities for this first sealed full-type roller bearing.

Detailed information is contained in a new bulletin, SGR-54. Write for it today.

McGILL® precision bearings

McGILL MANUFACTURING CO., INC. 100 N. LAFAYETTE ST. VALPARAISO, INDIANA

If you write maker identify as **IEN-11671**

Buck AJUST-TRU®

PAT. NO. 2,439,157

CHUCKS

Only universal scroll chuck with .0005" precision—for lathes, grinders, dividing heads, screw machines.

3-jaw and 6-jaw in 4", 5", 6", 7½", 9" sizes. 3-jaw Aviation chucks, for odd-shaped parts, in 6", 7½", 9" sizes.

ALSO SUPER-GRIP 4-JAW INDEPENDENT CHUCKS FOR 9" to 14" LATHES.

LOW COST PRODUCTION on Lathes-Grinders

Buck Ajust-Tru 7½" chuck turns bar stock and shafts to consistent precision at The Set Screw & Mfg. Co., Bartlett, Illinois.

Shop superintendents everywhere report their satisfaction with the way these universal scroll chucks cut machinists' time, line up *dead true* in *one* minute, hold to within .0005" re-chucking precision on duplicate parts. Some report cost savings of up to 50% per operation. The Buck chuck ends most needs for stub arbors, mandrels, special fixtures . . . adapts to lathes, screw machines, grinders, dividing heads.

Make your next chuck a Buck. It will save money every time you use it. Send for latest catalog.

BUCK TOOL COMPANY
1016 SCHIPPERS LANE • KALAMAZOO, MICH.

If you write maker identify as **IEN-11672**

FLOOR TO FLOOR TRANSFER MADE EASY WITH THE Unitized SLIDE BED INCLINE CONVEYOR

SPEEDS UP PRODUCTION

SAVES TIME!

SAVES MONEY!

Conveys *smoothly** up or down a 28° angle. Has ball bearing adjustable hump rollers and snub assembly. All bearings are grease sealed. Fully adjustable at all outside points to permit easy belt alignment. Powered by the economical Pakage Power Unit.

MAIL THIS COUPON TODAY FOR DETAILS

FREE!

ISLAND EQUIPMENT CORP. Dept. IEN-10
27-01 Bridge Plaza North
Long Island City 1, N. Y.

Please send me full details on the Unitized Slide Bed INCLINE CONVEYOR.

COMPANY.....

NAME.....

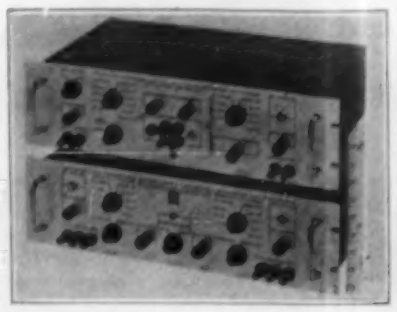
ADDRESS.....

CITY..... STATE.....

If you write maker identify as **IEN-11673**

Testing - Electronic amplifiers feed transducer signals to oscillograph

Source: BRUSH ELECTRONICS CO.
3405 Perkins Ave., Dept. IEN, Cleveland 14, Ohio



Details on request

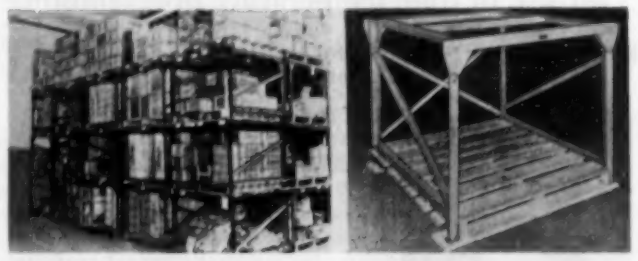
Variables such as acceleration, displacement, force, motion, pressure, strain, vibration are picked up from resistive or inductive transducers by two new amplifiers for direct recording on an oscillograph. Both amplifiers are available for standard 19-in. rack mounting.

Model BL-520 is a universal instrument that serves as a high gain carrier amplifier to accept signals from both resistive and inductive transducers. It has maximum sensitivity equivalent to 0.5 microvolt per chart millimeter or, for strain measurements, 0.25 microinches per inch. Model BL-530 is a dual channel dc. amplifier that will accept both single ended and differential signals with 50 millivolt sensitivity. Both instruments provide for balancing out voltages to 10 times full scale and input signal level to 500 volts.

If you write maker identify as **IEN-11674**

Storing - Structural frame and wood pallet for materials stacking

Source: FRICK-GALLAGHER MFG. CO.
Dept. IEN, Wellston, Ohio



An assembly of single units

New frame, measuring 48 by 48 by 41⅝ in., is set on a standard 48-in. wood storage pallet in construction of each element of this new stacking equipment. The frame has a load capacity of 7,000 lb. and will support empty or loaded pallets mounted upon it to any height within the maximum load carrying capacity of the bottom unit. Miscellaneous materials and irregularly shaped containers can be stored without danger of crushing since none is required to carry any load beyond that on a given pallet.

If you write maker identify as **IEN-11675**

Plasjoin VC is a new ready to use cement for joining rigid polyvinyl chloride pipe. The liquid material is available in half-pint, pint, quart and gallon cans from Merritt Products Co., 1547 E. 18th St., Dept. IEN, Cleveland 14, Ohio.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-11676**

GUARDIAN®
for single units or
COMPLETE CONTROL ASSEMBLIES

Ready to plug in

Write today—and you will receive fully descriptive literature on the type of control you need. Single units or complete control assemblies built to your specifications, our specialty!

Plus

A complete line of Switches and Contactors (Bulletin CS-1) (Bulletin SC-9)

GUARDIAN ELECTRIC
1620-L W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as **IEN-11677**

P&S PULL LAMPHOLDERS

One-piece design — no shadeholder to become loose. Built-in mechanism — can be wired without removing interior.

P&S PULL LAMPHOLDERS WITH CONVENIENCE OUTLETS

Same basic design as P&S 4046-2, *plus* outlet connected internally — no extra wires, soldering or taping.

Fine P&S porcelain—precision-built mechanism — will stand up under years of hard usage.

your choice make it . . .

P&S

Dept. IN

PASS & SEYMOUR, INC.
SYRACUSE 9, NEW YORK
Offices: 71 Murray St., New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

For information on complete P&S Line, send for Catalog No. 49. Specify P&S by catalog number.

If you write maker identify as **IEN-11678**

. . . things to watch for when buying Philodendron

But if you're buying special purpose STEELS, may we recommend the **SPEED STEELS**

SPEED CASE a low carbon free machining open hearth steel

SPEED TREAT a medium carbon free machining open hearth steel

SPEED ALLOY a chromium alloy steel

briefly they

- are easy to heat-treat
- are fast machining
- give longer tool life
- produce better finishes

THERE ARE SPEED STEEL SPECIALISTS IN . . .

☐ Akron, Ohio	Burger Iron Co.
☐ Bridgeport, Conn.	Bridgeport Steel Co.
☐ Buffalo, N. Y.	Beals, McCarthy & Rogers
☐ Cambridge (Boston), Mass.	Brown Wales Co.
☐ Chicago, Ill.	W. J. Holliday & Co., Inc.
☐ Dallas, Tex.	Earle M. Jorgensen Co.
☐ Detroit, Mich.	Peninsular Steel Co.
☐ Hammond, Ind.	W. J. Holliday & Co., Inc.
☐ Houston, Tex.	Earle M. Jorgensen Co.
☐ Indianapolis, Ind.	W. J. Holliday & Co., Inc.
☐ Lewistown, Me.	Brown Wales Co.
☐ Los Angeles, Calif.	Earle M. Jorgensen Co.
☐ Memphis, Tenn.	Pidgeon-Thomas Iron Co.
☐ Newark (New York), N.J.	Grammer, Dempsey & Hudson, Inc.
☐ Oakland (San Francisco), Calif.	Earle M. Jorgensen Co.
☐ Philadelphia, Pa.	Horace T. Potts Co.
☐ Toronto, Ontario	Peckover's, Ltd.
☐ Tulsa, Okla.	Earle M. Jorgensen Co.

W. J. Holliday & Co., Inc.
141 141st STREET • HAMMOND, INDIANA

Speed steels are produced by W. J. Holliday & Co., Inc.,

Speed Steel Plate Division

If you write maker identify as IEN-11680

WHY Southern?

Because with SOUTHERN STOVE BOLTS YOU PROFIT FOUR WAYS

Southern's prompt service means *low inventory* for you.

Southern's *consistent quality* adds to the value of your product.

Southern stove bolt *dependability* avoids waste and lost production time.

Southern stove bolts, slotted steel—round and flat, are available in a *wide range of sizes* for your individual needs.

Southern Wood Screws, Phillips or slotted, flat, round and oval, in all popular materials and finishes.

For free samples and information, write Box 1360-E

SOUTHERN SCREW COMPANY

STATESVILLE, N. C. WOOD SCREWS • STOVE BOLTS

FACTORY WAREHOUSE: New York, N. Y. • Chicago, Ill. Los Angeles, Calif. • Dallas, Texas

If you write maker identify as IEN-11681

IN QUANTITY PRODUCTION
cppc's New High Accuracy, Low Weight Synchro Series

- Standard Size Mounting Dimensions
- Transmitters, Receivers, Differentials, Control Transformers, Resolvers
- Clamped Bearing Race Construction
- *Consistent* Accuracy in Quantity Production
- Competitively Priced
- Products of the Engineering Team Which Pioneered Precision Synchros

For full engineering information, drawings, electrical characteristics, etc., write or telephone T. W. Shoop, Sales Mgr. Telephone (Philadelphia), Madison 6-2101.

cppc

CLIFTON PRECISION PRODUCTS COMPANY INC.

CLIFTON HEIGHTS — PENNSYLVANIA

If you write maker identify as IEN-11682

SMITHS TACHOMETERS

FOR PRECISE AND RAPID MEASUREMENT OF SHAFT SPEEDS, CUTTING SPEEDS, AND SURFACE SPEEDS.

MAGNETIC DESIGN is simple, compact, and rugged. Requires only 0.075 ounce-inch torque at 5,000 r.p.m.

JEWELLED for permanent precision. Accuracy of ±0.5% in either direction of rotation and in any position.

NINE RANGES to 50,000 r.p.m. Four models, each multi-range to suit your specific needs.

OVERSPEED PROTECTION inherent and built-in. STOP BUTTON "memorizes" reading when desired.

Complete Service Facilities

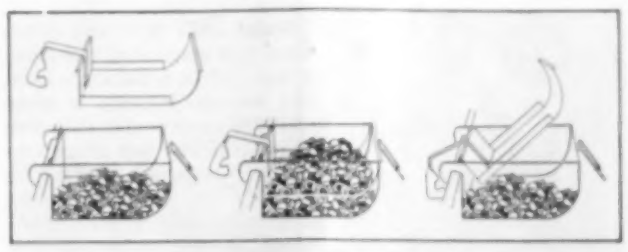
CLARENCE J. MARX CO.

Box 4033, Dept. IEN • Cleveland 23, Ohio

If you write maker identify as IEN-11683

Storing - Small parts boxes with hinged bottom to call for refill

Source: SERVICE PARTS SYSTEMS INC.
13380 E. 9-Mile Road, Dept. IEN, East Detroit, Mich.



False bottom acts as signal

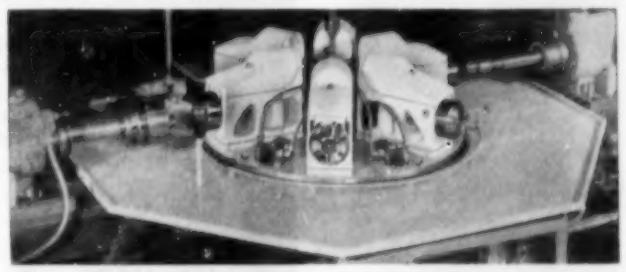
Suspension System designates a previously developed design of small parts boxes and means for suspending them at a bench, on a wall or on a truck. To this initial system, has been added a Flipo steel insert false bottom that makes each box a double compartment unit. A predetermined quantity of small parts is placed in the bottom compartment under the Flipo bottom. Then the bottom itself is positioned on these parts and additional parts put on top of it for immediate use.

The bottom is hinged upward by the operator, when the parts on top of it have been exhausted, to signal the need for replacement by its bright red bottom color. An operator, with a truck load of refilled containers, moves from one location to another removing those with their signals showing and replacing them for continuing action. The company has developed a line of bench and floor bins designed to work in connection with these new boxes for a complete small parts control installation.

If you write maker identify as IEN-11684

Vise - Air collet design to secure work on a machine table

Source: PITT INDUSTRIES INC.
Dept. IEN, Carnegie, Pa.



Please note our omission of important facts

Illustrated is multiple assembly on an indexing table of the Airkolet Chuck previously described in IEN-9805-54. The view was taken from the company's advertisement, IEN-10000-54, to emphasize adaptability of the new unit for indexing applications, a point that was omitted from the original description. A second point, that also was omitted, is the fact that the collet jaws open and close a sufficient amount to take work pieces that vary as much as $\frac{1}{16}$ in. in diameter or equivalent dimension.

The non-rotating chuck is supplied with a master collet and a set of soft pads, or one solid collet for round or hexagon work. Additional collets or pads for special shaped work are available to order. Overall work range is ⅜ to 1⅞ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11685

CUT YOUR COSTS

INVESTIGATE THE BIG SAVINGS IN FILE SHARPENING

The largest and most successful corporations in the world have their files re-sharpened—so—
Why don't you?

We have sharpened files for America's largest industries for over 33 years . . . and savings today are greater than ever before!!

A true sharpening process . . . basically the same as used by new file manufacturers. Not an acid process. No charge for files not suitable for re-use.

Fill in reader service slip for prompt information and details on our

FREE TRIAL OFFER

REGRINDING	RESHARPENING
ROTARY FILES	• AMERICAN PATTERN
• HIGH SPEED	• SWISS PATTERN
• CARBIDE	• VIXEN & BODY FILES
	• MACHINE FILE BANDS

SERVICE FILE SHARPENING CO.

4461 W. JEFFERSON DETROIT 9, MICHIGAN
WEST COAST PLANT
2424 MERCED ST. SAN LEANDRO, CALIF.

If you write maker identify as IEN-11686

ADAPTABILITY! **Singly, or in combination, these valves provide 2-way, 3-way or 4-way control. Hand, foot, cam or solenoid operated. Every pipe size from ¼" through 1¼". Write for Bulletin 231.**

HANNIFIN

Hannifin Corporation • 507 South Wolf Road • Des Plaines, Illinois
AIR and HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

If you write maker identify as IEN-11687

Smoke, Sun, Salt Laden Air won't hurt this REINFORCED PLASTIC DOME

Protecting the valves and tops of this PYROFAX gas cylinder from snow, water, and falling objects is a year-round job.

That's why these detachable domes are molded from reinforced plastics made from glass fibers and BAKELITE Polyester Resins. They're lightweight, tough, strong and are resistant to corrosive atmospheres, moisture, and salt laden air. No coatings are needed. They are included in the operating equipment approved by Underwriters' Laboratories.

Production is easy with reinforced plastics made of BAKELITE Polyester Resins and glass fibers, bringing lower costs in many cases. Moldings as large as auto bodies and aircraft radomes are being made from these same materials.

Bakelite Company is the one source that supplies a variety of polyester resins, as well as epoxies, phenolics, and epoxy-phenolics for reinforced plastics. It can also help make your application a success through its vast technical resources and years of experience in working with plastics. To learn how much this can mean, write Dept. ZC-14, stating your problem.

"Pyrofax" is a registered trade-mark of Pyrofax Gas Corp., a Unit of Union Carbide and Carbon Corporation.

Covers molded by Molded Fiber Glass Co., Ashtabula, Ohio, and Woodall Industries, Inc., Detroit 34, Mich.

BAKELITE
TRADE-MARK

POLYESTER, PHENOLIC, AND EPOXY RESINS FOR REINFORCED PLASTICS

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.

If you write maker identify as IEN - 11689

Goes further!

- No waste
- Lasting "tack"
- Full measure
- Stays fresh
- Best buy for plant supply

In single rolls or 10-roll cartons. Every roll cellophane protected. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

For every job

FRICTION • RUBBER • PLASTIC

JENKINS *GoldSeal Tape*

TRADE JENKINS MARK

Jenkins Bros . . . MAKERS OF FAMOUS JENKINS VALVES

If you write maker identify as IEN - 11690

FREE!

PRACTICAL DATA ON EXTRUDED RUBBER AND PLASTICS . . . MOLDED RUBBER PARTS

Here is a free booklet helpful to those interested in the design and use of extruded rubber and plastics and molded rubber. Our complete custom design and production service is available on all these products *now!*

General can save you time, money and production headaches with its own tool and die-making facilities, self-designed molding and extruding machinery, and full scale quality control at every phase of manufacture.

For further information write for your free booklet today.

THE GENERAL TIRE

"From Plans to Products in Plastics and Rubber"

Industrial Products Division
WABASH, INDIANA

The General Tire & Rubber Company
Industrial Products Division
Wabash, Indiana

☐ Send booklet on your plastic and rubber products
☐ Have your representative contact us

Name _____
Company _____
Street _____
City _____ State _____

IEN-10-54

If you write maker identify as IEN - 11692

Lighting - Emergency unit switches to battery on circuit failure

Source: HOBBY & BROWN ELECTRONIC CORP.
55 Front St., Dept. IEN, Rockville Centre, N. Y.

For instant light

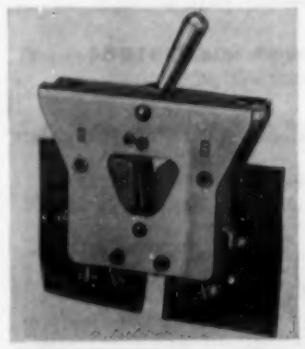
Model 200X is a new emergency unit employing two flood or spot lights, a 100-amp. lead-acid storage battery, a relay operated switch and charging equipment. The unit plugs into a normal electric circuit where it rides with its battery circuit open and its charger circuit closed as long as normal conditions exist.

Failure in the normal circuit results in closing the battery circuit to the lights so they provide required illumination until the fault in the normal circuit has been corrected. Then the emergency lights are extinguished and the charger takes over to restore the battery to normal. The battery is good for about 12 hours of light operation before recharging is required.

If you write maker identify as IEN - 11693

Switch - Snap acting design in 3-position toggle lever assemblies

Source: MICRO SWITCH DIVISION
30 E. Spring St., Dept. IEN, Freeport, Ill.



Data Sheet P93

A series of six new three-position sensitive switches with toggle lever operation carries the designation 11AT. Each assembly employs two single-pole double throw basic switching units. Variations are in combinations of momentary and detented lever positions. Three of the assemblies employ basic switching units and three are equipped with impact resistant units. Electrical rating is 10 amp. on 110 or 220-volt ac. in Underwriters' Laboratories "listed" assembly. Dimensions overall are 2½ by $\frac{5}{16}$ by 3⅛ inches.

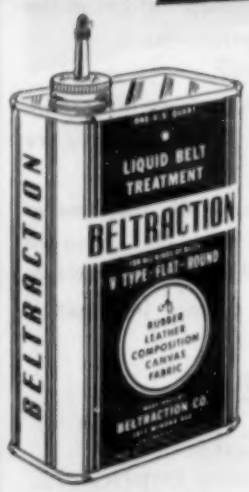
If you write maker identify as IEN - 11694

Portable gas welding equipment has been assembled by Harvey Aluminum, 19200 S. Western Ave., Dept. IEN, Torrance, Calif., particularly for its field engineers to employ on aluminum construction. Basic equipment includes an 80 cu. ft. oxygen cylinder, a Type-B acetylene cylinder, torch and tips, regulators, twin hose, goggles, wrench and lighter. Cutting attachments and cylinder carts can be specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11695

Get More Power AT NO EXTRA COST



For ALL types of belts — V-Type, Flat or Round. More than 110,000 users.

Machines Respond Quicker Production Rises — Drive Belts Work Efficiently with

BELTRACTION

LIQUID BELT TREATMENT

It is like adding extra production capacity without adding a cent to your investment in equipment when you start using BELTRACTION on your drive belts.

BELTRACTION by stopping costly belt slippage increases driving speeds, raises production per machine and prevents costly shutdowns for repairs. Drive belts are kept clean and pliable —and last longer. Order from your supplier today! Free folder sent on request.

BELTRACTION COMPANY
1819 W. Winona St. Chicago 40, Ill.

FOR ALL TYPES OF BELTS • V-TYPE, FLAT OR ROUND

If you write maker identify as IEN - 11696

The BIG Tool and Job Capacity

18" CLAUSING DRILL PRESS with *power feed*

★ Drills 1" cast iron, ¾" steel ★ No. 3 Morse Taper, 6½" spindle travel ★ HEAVY-DUTY GEAR-DRIVEN POWER FEED TO TAKE FULL ADVANTAGE OF THIS BIG TOOL AND JOB CAPACITY.

An 18" heavy-duty drill press, with larger tool and job capacity, PLUS a heavy-duty GEAR-DRIVEN power feed to make effective use of its capacity. The power feed, with its large heavy-duty gears, is positive and sure — NO belt slippage to reduce power. Feed selection is instant — BY DIAL — no belts to change. Add the Clausing features of new spindle bearing engineering, vernier depth stop, and exclusive head and table positioning mechanism — and you know this is a tool that can save you plenty on both set-up and operating time. Get all the facts before you buy any drill. See your ATLAS CLAUSING Dealer!

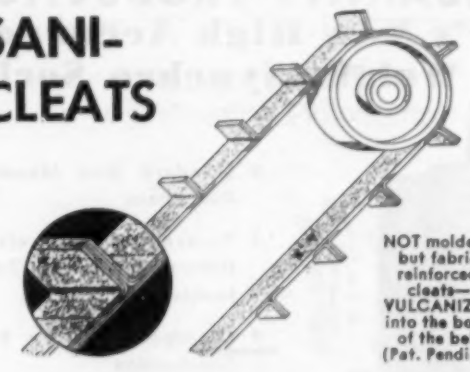
WRITE FOR LITERATURE —TODAY!

Atlas CLAUSING

CLAUSING DIVISION—ATLAS PRESS COMPANY
10-105 N. PITCHER ST., KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 11697

SANI-CLEATS



Solves your cleated belt problems with 47 types of belting to handle a variety of products.

Promotes Sanitation as there are no gaps or crevices. No bolts—rivets or metal.

Highly flexible SANI-CLEATS can bend parallel to belt. Can be made stiff or flexible as desired.

Any height, width and spacing with SANI-CLEATS

Write for literature

A. J. SPARKS & CO.
863 Grandville Ave., S. W.
Grand Rapids, Michigan

SPARKS BELTING

If you write maker identify as IEN - 11698

Tempilstik° FOR ALL HEAT-DEPENDENT OPERATIONS

looks like a crayon... marks like a crayon... tells temperatures like a precision instrument!

Sixty-three different compositions enable you to determine and control working temperatures from 113° to 2000° F. TEMPILSTIK° marks on workpiece "say when" by melting at stated temperatures—plus or minus 1%.

ALSO AVAILABLE IN LIQUID AND PELLET FORM . . . WRITE TECHNICAL DEPT. FOR SAMPLE TEMPIL° PELLETS . . . STATE TEMPERATURES OF INTEREST—PLEASE!

Tempil°
CORPORATION
132 WEST 22ND STREET, NEW YORK 11, N. Y.

If you write maker identify as IEN-11699

new design possibilities! new production economy!

GRC

GRC INJECTION MOLDING TECHNIQUES OFFER WIDE FLEXIBILITY AT IMPORTANT SAVINGS!

Gries tiny thermoplastic parts meet simple or intricate specifications precisely, uniformly, and economically. We mold all thermoplastics! Nylon, Kel-F, acetates, polystyrene, polyethylene, etc. Quantities of 25,000 to millions.

SMALL PLASTIC PARTS

NYLON A SPECIALTY

Gries' unique special molding facilities make the most of nylon's unique advantages—at the least cost!

AUTOMATIC INSERT MOLDING Exclusive facilities for individual or continuous inserts; finished parts produced automatically — without manual labor of any kind!

Write today for samples and informative bulletins; send prints for quotations.

MAXIMUM SIZE: .025 ex-1" long
NO MINIMUM SIZE

GRIES REPRODUCER CORP.

World's Foremost Producer of Small Die Castings
139 Beechwood Ave., New Rochelle, N. Y., New Rochelle 3-8600

If you write maker identify as IEN-11700

NOW TWO GREAT NAMES IN MATERIALS HANDLING COMBINED!

THOMAS TRUCK *of Keokuk*

announces the purchase of

THE LANHAM COMPANY of Louisville, Kentucky

LANHAM

FOR LIFETIME

The addition of the famous LANHAM line of Skid Platforms, Skid Boxes and Allied products will enable THOMAS to offer a more complete service to their customers in the quality materials handling products field. The LANHAM name will be used in the marketing of these products and distribution will be continued by Lanham sales representatives throughout the country. THE LANHAM SKID CO. offices and production facilities are now located at Keokuk, Iowa.

THOMAS

THOMAS TRUCK & CASTER CO.
575 MISSISSIPPI RIVER • KEOKUK, IOWA

If you write maker identify as IEN-11702

Construction - Trenching machine mounts digging wheel on vertical mast

Source: KOEHRING COMPANY
3026 W. Concordia, Dept. IEN, Milwaukee 16, Wis.

Model 150 at work

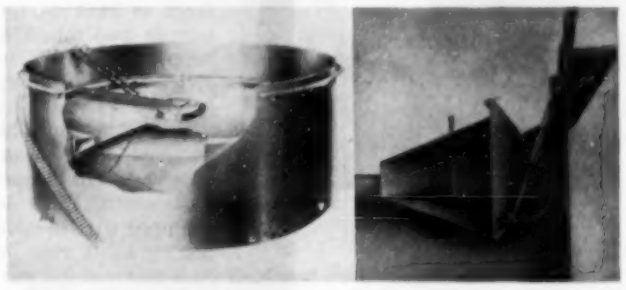
Digging capacity for this new Parsons Trenchliner machine rates 12 in. to 25 lineal ft. of 16 to 26-in. trench to a depth of 5¾ feet. The hydraulically-positioned digging wheel is raised and lowered on a vertical mast by a hydraulic ram and the mast is tilted by a second ram to carry the weight of the wheel forward on the machine for travel and handling balance.

The wheel is driven at three speeds, maximum at 11.25 rpm. Thirty digging feeds can be selected at the operator's position. A shiftable reversible belt conveyor discharges spoil to either side. A friction clutch on the wheel drive protects the machine against shock loading. Various bucket designs are available. Drive is by a gasoline or diesel engine. Ground bearing pressure is 6 to 8 lb. per sq. in. depending on application of 16 or 12-in. lug type crawler treads.

If you write maker identify as IEN-11703

Storing - Petroleum products tank has floating roof with a sliding seal

Source: GRAVER TANK & MFG. CO.
4811 Tod Ave., Dept. IEN, East Chicago, Ind.



Illustrated details on request

Illustrated to the left is the company's design of center weighted floating roof for petroleum product tanks, previously described IEN-7155-51. To the right is a section through the roof at the outer edge to show the new Vapor-Stop seal that prevents vapor from escaping. The seal bridges the gap between the edge of the floating roof and the tank shell without setting up any binding action.

Spring hangers and weighted pushers are spaced at intervals around the roof and are connected to it. They hold the thin galvanized-steel sealing shoe against the tank shell and keep the roof centered. A fabric impervious to vapors connects and seals the shoe to the roof.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11704

ELECTRONICS MANUFACTURER

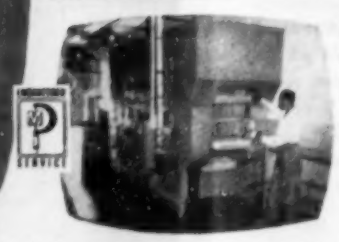
REPORTS OVER 30% SAVINGS IN

DEGREASING SOLVENT

PHILLIPS

Raytheon Mfg. Co. reports over 30% savings in degreasing solvent since the installation of its new Phillips cross-rod conveyorized degreaser. In degreasing operations for its highly reliable quality line of receiving tubes, Raytheon also reports these added advantages: Automatic adjustable timing cycle for uniform degreasing; savings in operator time; minimum fume exposure; and consistently cleaner parts. Just another story of Phillips efficiency degreasers. Check with us today for the answer to your cleaning problems. We'll be glad to help you with your "problem" parts. Send us a sample for test with the new PHILLIPS "Ultra Clean" process.

VAPOR DEGREASERS



The Phillips cross-rod conveyorized degreaser installed at Raytheon's receiving tube division.

Look for us at the National Metal Exposition—Chicago Nov. 1-6 Booth 1319

PHILLIPS MANUFACTURING COMPANY
ENGINEERED METAL CLEANING EQUIPMENT
3461 TOUHY AVENUE • CHICAGO 45, ILL.

Send for your copy of the Phillips Catalog showing a complete line of units—one for every job.

In Canada Phillips equipment is manufactured under license by Williams Tool Corp. of Canada, Ltd., Brantford, Ont.

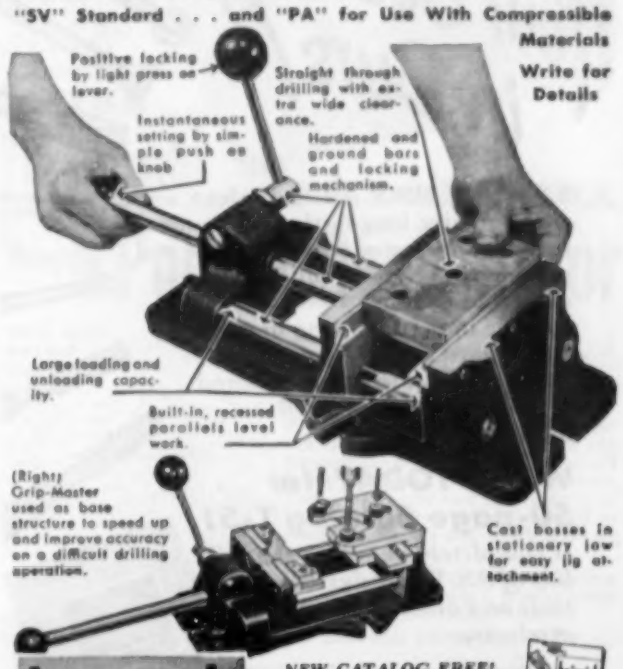
If you write maker identify as IEN-11705

HEINRICH "GRIP-MASTER" SCREWLESS DRILL PRESS VISE

NOW AVAILABLE IN TWO TYPES

"SV" Standard . . . and "PA" for Use With Compressible Materials

Write for Details



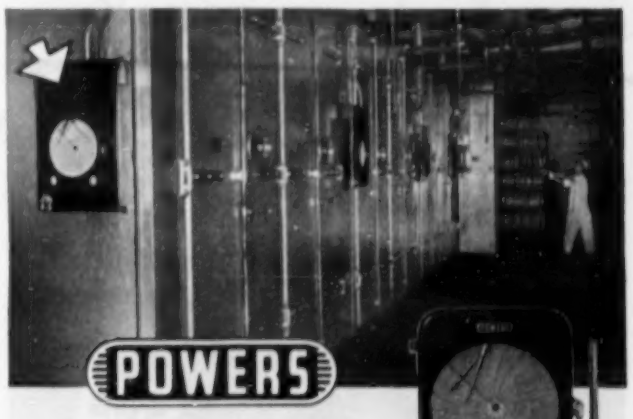
heinrich TOOLS, INC.

NEW CATALOG FREE! Be sure you have a complete Heinrich Tool Catalog in your files. Your copy will be sent free upon request.

Dept. 174-K • RACINE, WIS.

Drill Press Vises • Fixture Locks • Nibblers
Punches • Rod Cutters

If you write maker identify as IEN-11706



POWERS

AIR CONDITIONING CONTROL SYSTEM FOR PROCESSES—Temperature, humidity and air pressure in the modern smoke houses above are automatically held at the right point with unfailing accuracy by Powers automatic control.

Losses from shrinkage or inferior quality products are eliminated and uniform flavor, color and texture of product are insured by accuracy of Powers control. Your temperature control problem may be different, but like many others for which Powers has supplied the right control. Why not call our nearest office now or write us direct for Bulletin 370. (c13)

THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in 60 Cities • See Your Phone Book

Over 60 Years of Automatic Temperature and Humidity Control

If you write maker identify as IEN-11707

HERE'S A MAN YOU SHOULD KNOW

He's one of hundreds of traveling MALL salesmen whose mobile tool "warehouses" are equipped for on-the-job demonstrations. He will be only too happy to demonstrate any of the hundreds of MALL tools you want to see in action. There are forty MALL Service Warehouses, coast to coast. Phone or write the one nearest you—or any of the thousands of MALL stocking dealers—or our Chicago home office for a free demonstration without obligation.

THE BIGGEST ASSORTMENT OF POWER TOOLS OFFERED BY ANY MANUFACTURER

The MALL line includes many types and sizes of: Small Electric Drills—Heavy Duty Electric Drills—Portable Electric Saws—Gasoline Chain Saws—Bench Grinders—Electric Chain Saws—Electric Polisher-Sanders—Electric Screwdrivers—

Mall

Electric Impact Wrenches—Flexible Shaft Machines—Portable Pneumatic Saws—Pneumatic Chain Saws—Pneumatic Grinders—Pneumatic Drills—Pneumatic Polishers—Pneumatic Sanders—Pneumatic Screwdrivers—and MANY OTHERS!

MALL TOOL COMPANY PORTABLE POWER TOOLS Gasoline • Electric • Air
7782 S. Chicago Avenue, Chicago 19, Illinois

Please have one of your traveling MALL salesmen call on me when he is in my neighborhood.

Name _____
Firm _____
Address _____
MU-123

If you write maker identify as IEN-11708

Your Best Buy in Burs!

S.S.WHITE BURS cut fast, clean and cool and give long-lasting economical service. Cutting edges are keen — and stay sharp. There's a full selection of sizes and shapes of steel, and carbide burs for cutting brass, steel, wood, hard rubber, bone or any other material that can be bored or milled by sharp-edged hardened steel tools.

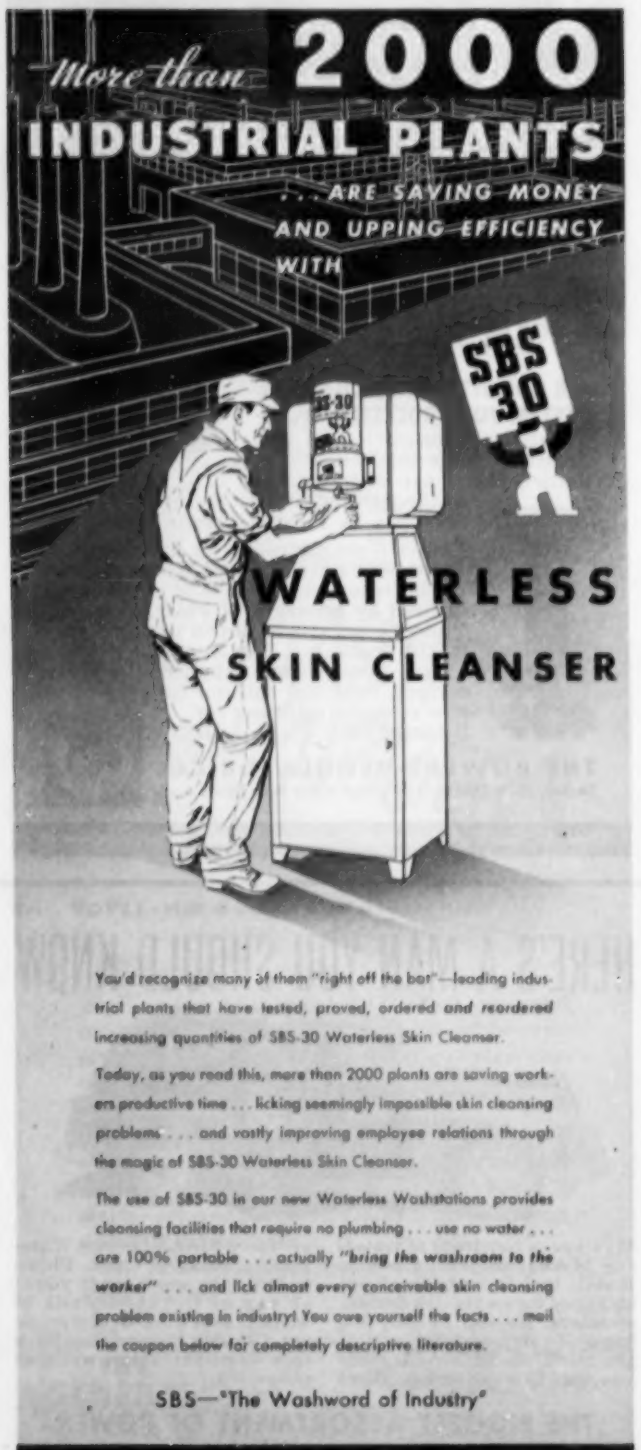
WRITE TODAY for 50-page Catalog T-51

It completely describes the full line of S.S. White flexible shaft tools and other industrial products.

THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO.
Dept. N, 10 East 40th St.
NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN-11709



You'd recognize many of them "right off the bat"—leading industrial plants that have tested, proved, ordered and reordered increasing quantities of SBS-30 Waterless Skin Cleanser.

Today, as you read this, more than 2000 plants are saving workers productive time . . . licking seemingly impossible skin cleansing problems . . . and vastly improving employee relations through the magic of SBS-30 Waterless Skin Cleanser.

The use of SBS-30 in our new Waterless Washstations provides cleansing facilities that require no plumbing . . . use no water . . . are 100% portable . . . actually *"bring the washroom to the worker"* . . . and lick almost every conceivable skin cleansing problem existing in industry! You owe yourself the facts . . . mail the coupon below for completely descriptive literature.

SBS—"The Washword of Industry"

SUGAR BEET PRODUCTS CO. SAGINAW, MICHIGAN
CHEMICAL BY-PRODUCTS DIVISION

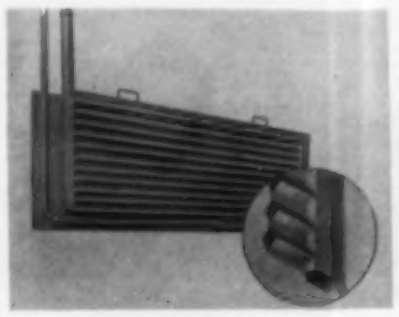
Sugar Beet Products Company, Saginaw 16, Michigan
Rush literature on SBS-30 Waterless Skin Cleanser and Washstations:

Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State_____

If you write maker identify as IEN-11711

Heating - Embossed metal plates to carry a heating or cooling medium

Source: TRANTER MFG. INCORPORATED
736 E. Hazel St., Dept. IEN, Lansing 4, Mich.



Connects to pipe line

Two mating embossed plates form the halves of this heat transfer unit, the same as in the original design previously described IEN-11137-47. Now the company is prepared to supply the assembly in new metals to include Ampco alloy, Carpenter 20 alloy, Hastelloy B and Hastelloy C. Assembly of the two halves is by welding to produce channels for passage of the heating or cooling media. The unit replaces pipe coils economically.

These metals are in addition to the previously employed cold rolled steel, stainless steel, Monel Metal. The user can specify the metal best suited for a given application involving heating, cooling in solutions for operations such as plating, washing, rinsing, processing.

If you write maker identify as IEN-11712

Storing - Hopper front bins to hold small parts for easy pickup

Source: UNION METAL MFG. COMPANY
1432 Maple Ave. NE, Dept. IEN, Canton 5, Ohio

Tops are open

Work-O-Matic designates this new hopper front steel bin. It is made in seven sizes measuring 6 in. from front to back on the bottom and top. The hopper front is 3 in. in depth. The largest bin is 18 in. in width by 24 in. in height. The smallest unit measures 6 in. in height and width. Each is equipped with hanger angles so it can be hung on a wall, above a work bench, or on a frame work convenient to assembly or maintenance operations. It also can be set on a bench as shown in the illustration.

If you write maker identify as IEN-11713

Stabilizing plate, hydraulically operated, is brought down on a load of boxes or cartons on the forks of the Lewis-Shepard truck when it is equipped with the new devices. Loads can be carried without danger of falling off. The new unit has a vertical stroke of 10 in. and will handle loads from 56 to 64 in. in height. It hinges to an upright position when it is not needed. Lewis-Shepard, 125 Walnut St., Dept. IEN, Watertown 72, Mass. is the maker.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11714

. . . use NUGENT PRESSURE FILTERS!

PROTECT your equipment from the ravages of improperly filtered oil. Use Nugent pressure filtering — a fast, economical method of assuring a constant supply of clean cool oil for vital parts. In addition to longer machine life, savings in oil by this method run as high as 99.8%. Write for complete information.

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS
NUGENT TRADE MARK Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . *Representatives in Principal Cities*

If you write maker identify as IEN-11715

When it comes to Welding Come to MARQUETTE

For *all* your needs . . . Marquette offers the newest, most *complete* line in the industry today:

Utility AC Welders—2 Models

New "Instant Arc"—the only fully "dead Cabinet" AC Welders—4 Models

AND NOW . . .

Heavy Duty Industrial AC Welders—6 Models

Rectifier Type DC Welders—5 Models

Gas Driven AC Welder and power Plant Combinations—2 Models

Welding electrodes for all applications

Oxy-Acetylene Welding and Cutting apparatus, Welding Accessories, Fluxes and Supplies

Write for full details today

MARQUETTE MANUFACTURING CO., INC.
307 East Hennepin Avenue • Minneapolis 14, Minnesota

If you write maker identify as IEN-11716

No Testing Problem is "too special" for the

Dillon UNIVERSAL TESTER

Special versions of the Dillon Tester can be furnished to handle virtually any size, shape or type of material.

A typical application of the Dillon Universal Tester used to pull projectile from case to determine effectiveness of crimp.

Pictured here is just one of the hundreds of problems handled by inexpensive Dillon Testers. Not only do they check every conceivable *type* of material, but also both standard and *special* shapes. Interchangeable fixtures permit tensile, compression, transverse and shear tests. Capacities range from 0-250 to 0-10,000 lbs. Motorized or hand-operated.

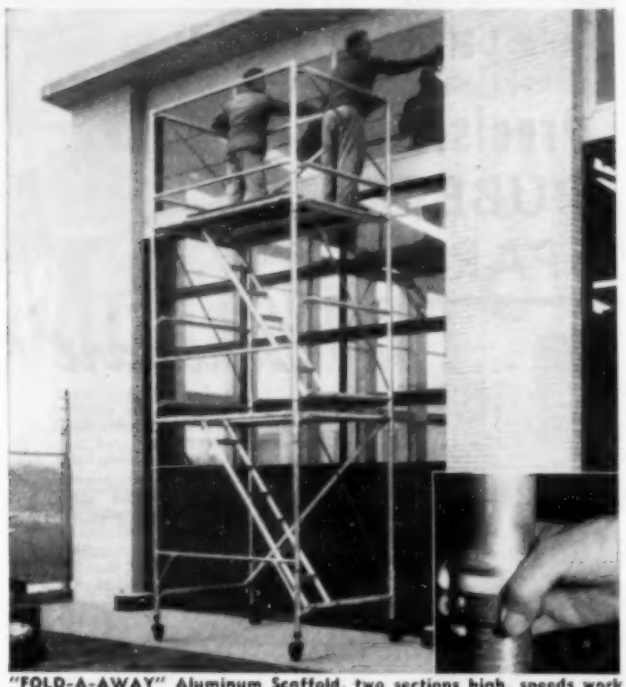
With a Dillon Tester, any average employee can handle all your testing problems after just a few minutes' instruction . . . right in your own shop. Consult us for the practical solution to YOUR testing problems.

★ *WRITE FOR ILLUSTRATED BULLETIN . . . . . .*

W. C. DILLON & CO., INC.
PRECISION INSTRUMENTS FOR PRECISION TESTING
14620K Keswick St., Van Nuys, Calif. (Suburb of Los Angeles)

If you write maker identify as IEN-11718

If you write maker identify as IEN-11719



"FOLD-A-AWAY" Aluminum Scaffold, two sections high, speeds work on typical maintenance job. Inset: New type "built-in" Extension Leg gives safe, positive adjustments without lifting Scaffold. Two quick turns give 1" of adjustment.

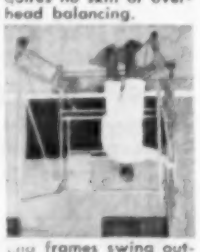
This Aluminum Scaffold Opens Like a Book

ONE OF THE MOST remarkable scaffolding developments of recent years is the "Fold-A-Way"* Aluminum Scaffold, designed with a folding base section that one man can erect in less than 60 seconds. It is approved by Underwriters' Laboratories, Inc.

"Fold-A-Way" end frames swing open sideways (like the pages of a book) while the 7'-high base unit is in a standing position, making an easily-managed swing of about 90 degrees, while the operator stands inside the base area.

Made of 61S-T6 aluminum alloy with 2" O. D. Tubes for major members, the "Fold-A-Way" Scaffold features 5" aluminum, rubbertired caster wheels. New Extension Legs permit height adjustments up to 24". Base section dimensions are 4'6" x 6', and height is 7' including casters. Intermediate sections are 6' high, while the half section and folding guard rail section are each 42" high. Write for Bulletin ASF-1.

Sections fold into compact 6½" package. Requires no skill or overhead balancing.



End frames swing outward like pages of a book. Entire base section is free standing during erection.

Workman is constantly WITHIN the base area of the scaffold. No loose parts.

LADDER SCAFFOLDS
2' Wide by 4' 6" Wide

Erected from ladder frames of three heights, these Aluminum Ladder Scaffolds are available in spans of 6 ft., 8 ft. or 10 ft. Approved by UL.

*Trade Mark

FOR GREATER SAFETY . . . EFFICIENCY . . . ECONOMY

Gold Medal LADDERS SCAFFOLDING — THE PATENT SCAFFOLDING CO., INC.

32-21 Twelfth Street • Dept. IEN • Long Island City 1, N. Y.

Branches in All Principal Cities

If you write maker identify as IEN-11721

Cleaning - Drum type scrubber washes soft materials from aggregates

Source: McLANAHAN & STONE CORP. Dept. IEN, Hollidaysburg, Pa.

Details on request

Aggregates, encrusted with soft materials such as loam, clay, are delivered into this new revolving scrubber through a feed hopper and chute. Water also is directed through the chute. The materials tumble and cascade inside the drum to break down the soft materials and dissolve them into the water. The clean aggregate moves toward the discharge and there it falls into a second chute for delivery to a dewatering screen where fresh water performs the final cleaning operation. Drive is by a 100-hp. 155-rpm. geared head motor.

If you write maker identify as IEN-11722

Sealing - Asbestos sheet for refrigeration compressor heads

Source: RAYBESTOS-MANHATTAN INC. Dept. IEN, Manheim, Pa.

Refrigeration oil swells the neoprene

Thickness ranges from 1/64 to ⅛ in. and sheet sizes from 40 by 40 in. to 150 by 150 in. in a new compressed sheet gasket material composed of asbestos and neoprene. The sheet is employed to make head gaskets for refrigeration compressors handling Freon 22. It also will seal against leakage of the other types of Freon refrigerant. The sheet meets ASTM 1170-G-1123 and AMS 3231 requirements.

The sheet has a compression of 17 plus 4 per cent. Recovery after compression is 35 per cent based on compressed thickness. Tensile strength is 3,000 lb. per sq. in. and density is 1.10 oz. per cubic inch. The sheet can be bent 180 deg. without cracking over mandrel diameter four times sheet thickness.

If you write maker identify as IEN-11723

Mixing - Motor driven machine for tests of future production work

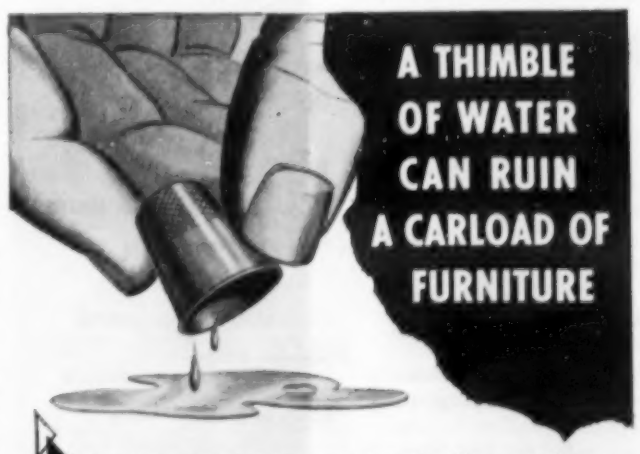
Source: COWLES COMPANY 150 Trackside Place, Dept. IEN, Cayuga, N. Y.

For laboratories

Model 1-VT is a new small version of the company's regular production size of its Ultrafast mixer, or dissolver, previously described IEN-380-54. It stands 30 in. in height, is equipped with hand operated hydraulic lift for maximum height of 44 inches. Drive is by a 1-hp. motor. Three patented Cowles impellers are supplied for interchangeable use. They measure 3, 3½ and 4 in. in diameter. The machine will handle batch work to 5 gal. in maximum capacity.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN-11724



Just let a droplet of water form inside an air line at a paint spray booth and the result is always the same. The product must be expensively refinished. Droplets of water are undesirable everywhere in air lines at paint spray booths, air tools . . . in fact, all pneumatic equipment. Hi-eF purifiers not only remove all dirt and water but are absolutely maintenance free, no messy filters to change...no moving parts to replace.

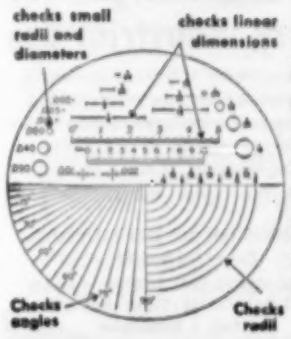
FREE Bulletin 501 shows how to save money on air lines with Hi-eF Purifiers. Write The V. D. Anderson Company, 1966 West 96th Street, Cleveland 2, Ohio.

ANDERSON Hi-eF PURIFIERS

Hi-eF PURIFIERS
KEEP DIRT AND MOISTURE OUT OF AIR LINES

If you write maker identify as IEN-11725

THE Original BELL & HOWELL Pocket Comparator



Saves time and money inspecting small dimensions

● Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

price only $36.00 order today

A product of BELL & HOWELL CO. Distributed by

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

Write for FREE descriptive folder

If you write maker identify as IEN-11726

New Lightweight Grinder is a HEAVYWEIGHT WORKER!

Put a new 7 pound air-powered CP Vertical Grinder in an operator's hands and he'll remove the same amount of metal he formerly did with a 10 pound tool! It's the CP-3190 . . . designed for driving cup wire brushes and grinding wheels, sanding discs, and cut-off wheels! Here are the features that tell why the CP-3190 takes a beating yet is seldom down for repairs:

- **Splined type floating rotor prevents end-plate wear from wheel thrust.**
- **Continuous lubrication afforded by large oil reservoir and built-in lubricator.**
- **Safety governor valve cuts off air supply in the event of possible governor failure.**

Available in speeds to 8000 RPM, in capacities capable of handling 6" cup wheels, and 7" and 9" disc sanding pads and cut-off wheels. *Chicago Pneumatic Tool Co., 8 East 44th St., New York 17, N. Y.*

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN-11727

Park cars • trucks busses • all types vehicles

The HARRIS-BARRIER Way

SAVE ON

- Space
- Time
- Money
- Installation
- Maintenance
- Replacement

Park 1 Car to 10,000 Cars Quickly, Efficiently!

HAR-BAR

HARRIS-BARRIER, INC.
Parking System Engineers • 3301 N. Tibbs • Indianapolis 22, Indiana

Large corporation parks cars compactly, smoothly with Harris-Barriers.

MAIL COUPON TODAY

Give dimensions and shape of your parking area. Harris-Barrier engineers will prepare your engineering kit without obligation!

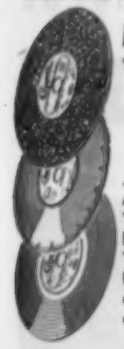
Name_____
Title_____
Company_____
Address_____
City State
Area Description:
Width____ Length____ Shape____

If you write maker identify as IEN - 11728

If you write maker identify as IEN - 11729

Nearly 20 Years Experience Behind GENUINE CLIPPER PRODUCTS

The unqualified Clipper guarantee of satisfaction is backed by world-wide experience, the ability to select the finest materials and the "know-how" to put them together.



DON'T GAMBLE!
You are GUARANTEED ECONOMY with CLIPPER SUPERIOR BLADES!
. . . all specifications of Abrasive, Diamond and "CBR" (Break-Resistant) Blades guaranteed to "Consistently Provide the fastest cut . . . at the lowest cost . . . with the greatest ease!"

FREE TRIAL!
Discover how Clipper will increase profits by increasing production at reduced costs. "ON THE JOB" FREE TRIAL guarantees satisfaction at NO OBLIGATION.

PATENTED CLIPPER FEATURES

PRESSURE EQUALIZER
Automatically Cushions Blade for Longer Life.

SELECT-A-NOTCH
Instant Adjustment for Any Size Material.

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH —SEE BELOW

Clipper

SAVE BY SAWING REPAIR PATCHES and TRENCHES IN FLOORS—RUNWAYS —STREETS with a CLIPPER "CONSAW"
5 MODELS—
GAS OR ELECTRIC POWERED

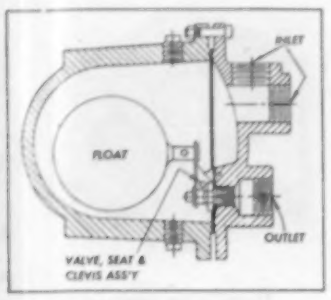
MANUFACTURING CO.
• CINCINNATI • BOSTON • WASHINGTON, D.C. • CHARLOTTE, N.C. • PHILADELPHIA • CLEVELAND • ST. LOUIS • CHICAGO • HOUSTON • AUSTIN, TEXAS • SAN FRANCISCO • ATLANTA • DETROIT • PITTSBURGH • NEW YORK • BIRMINGHAM, ALA. • LOS ANGELES • INDIANAPOLIS • ST. PAUL • MILWAUKEE • DALLAS
IN CANADA—P.O. BOX 476 WINDSOR ONTARIO

TEAR OUT AND MAIL!
CLIPPER MANUFACTURING CO.
11 E. 28TH ST., KANSAS CITY, MO.
Send FREE Literature and Prices on:
☐ CLIPPER MASONRY SAWS ☐ DUSTLESS MODELS ☐ DRY ONLY MODELS
☐ CLIPPER CONSAWS
☐ CLIPPER ABRASIVE BLADES ☐ WET ☐ DRY
☐ CLIPPER DIAMOND BLADES
98 IND.
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN - 11731

Trap - Ball float design removes moisture from air, gas, steam

Source: V. D. ANDERSON CO.
1935 W. 96th St., Dept. IEN, Cleveland 2, Ohio



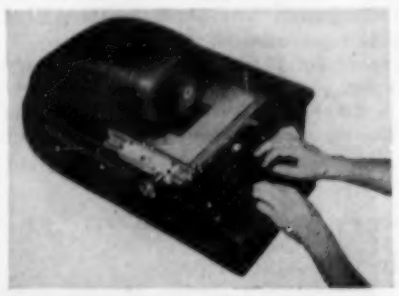
Detailed on Drawing S-1555

Liquid accumulation in the housing of this new No. 81 trap raises the ball float and opens the outlet valve. Line pressure in the housing blows the liquid out permitting the float to drop and close the outlet valve. The trap is suited for operating pressure to 200 pounds. It is fitted with ½ or ¾-in. threaded connections. The housing is semi-steel. The valve, seat and lever are stainless steel. List price is $17 with a copper-coated float. The list is $22 with a stainless-steel float.

If you write maker identify as IEN - 11732

Marking - Electric typewriter to impress characters in metal plates

Source: DEFIANCE MACHINE & TOOL CO.
1920 S. Vandeventer Ave., Dept. IEN, St. Louis 10, Mo.



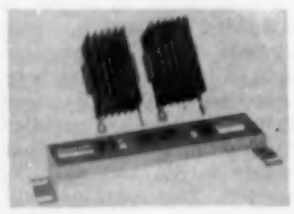
To type on metal

Light touch on the keys of this recently improved metal marking typewriter produces a clean sharp power-produced impression in a metal instruction or name plate. A maximum of 75 characters can be struck per minute. Drive is by a 1/12 or ⅙-hp. motor, the latter for heavy duty.

Construction includes a redesigned table feed mechanism for automatic shift, a heavy duty table with an adjusting knob, line and margin spacer, precision type wheels.

If you write maker identify as IEN - 11733

Conversion chassis has been developed by Sarkes Tarzian Inc., 415 N. College Ave., Dept. IEN, Bloomington, Ind., to permit application of the company's plug-in selenium rectifiers in old television receivers. The conversion unit simplifies future replacement of rectifiers and eliminates removing the chassis and soldering when the change is to be made.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11734

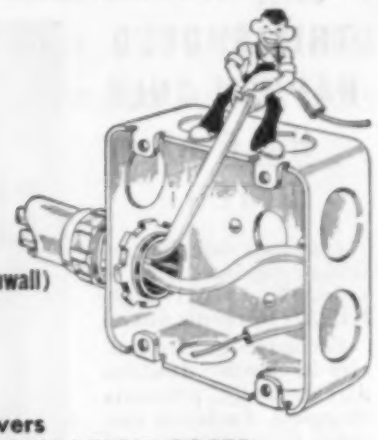
If you write maker identify as IEN - 11735

If you write maker identify as IEN - 11736

If you write maker identify as IEN - 11737

If you write maker identify as IEN-11738

T&B's NEW INSULATED THROAT CONNECTOR FOR E. M. T. (Thinwall)



- Lowers INSTALLATION COSTS
- Guards against BRUISED WIRING

A bright blue factory-inserted insulating liner completely covers the area inside the connector throat. A lip protrudes slightly beyond the connector body to form a telltale bright blue ring—similar to other T&B "blue" fittings—visual assurance for an inspector that the connection is insulated.

No separate insulating bushing needed! Installs just like a conventional connector. Same wrench size fits body and gland hexes. Extra-deep body provides a long area of firm, rigid support for tubing. Steel body, gland, ring, and locknut. Meets NEC requirements. UL approved. Write to T&B for free sample and descriptive literature or see your T&B Distributor.

T 424

THE THOMAS & BETTS CO.
INCORPORATED
60A Butler Street • Elizabeth 1, New Jersey
Thomas & Betts Ltd., Montreal, P. Q., Canada

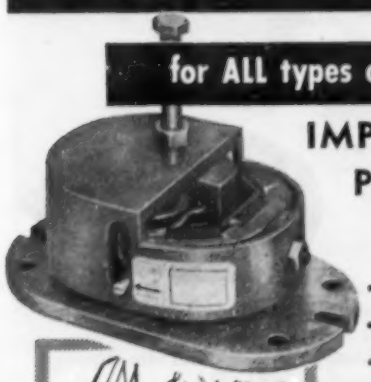
MANUFACTURERS OF QUALITY ELECTRICAL FITTINGS SINCE 1898

If you write maker identify as IEN-11739

NEW VIBRATION MOUNTING TYPE SF

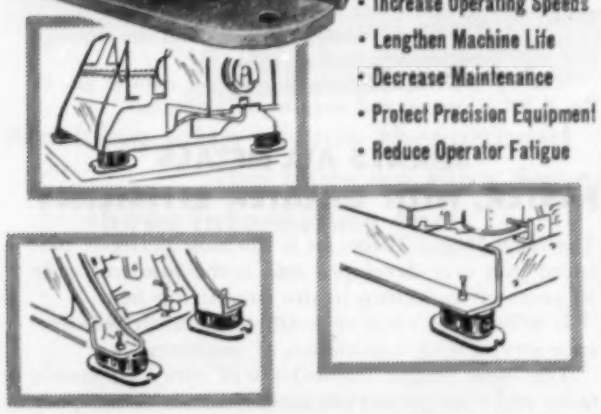
- Steel Springs
- Fully Enclosed
- Semi-Steel Housing
- Clog-Proof
- Adjustable On The Job
- Built-in leveler

the ONE mounting that provides isolation efficiencies approaching 100% for ALL types of equipment!

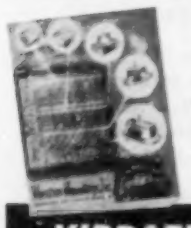


IMPROVE YOUR PRODUCTION 6 WAYS!

- Install Machines Anywhere
- Increase Operating Speeds
- Lengthen Machine Life
- Decrease Maintenance
- Protect Precision Equipment
- Reduce Operator Fatigue



COMPLETE LINE OF CORK, RUBBER, & FELT VIBRATION ISOLATING PRODUCTS



SPRING-FLEX® MOUNTINGS

Write today for Vibration Engineering Data Book & Catalog

VIBRATION MOUNTINGS, INC.
76-25 Queens Blvd. • Elmhurst, L. I., N. Y.

If you write maker identify as IEN-11741

Snow Plow - Engine driven, gathers and throws snow to one side

Source: WM. BROS BOILER & MFG. COMPANY
1057 Tenth Ave. SE, Dept. IEN, Minn. 14, Minn.

Operator steers

Snow is cut up and cast out by an engine-driven combination of gathering spiral and a centrifugal blower in this new Series-SA Sno-Flyr plow. The plow will cast the snow to 25 ft. on either side through a chute that can be positioned on its rotating base.

Type SA-20 measures 20 in. in width, rates 600 lb. per minute. Type SA-26 measures 26 in. in width and rates 1,200 lb. per minute. Both are driven and propelled by Kohler 4-cycle air-cooled engines with rating at 3½ and 6½ hp. Controls provide for two forward speeds and a neutral position. Construction includes a safety clutch and overload trip. Weights are 170 and 240 pounds.

If you write maker identify as IEN-11742

Cleaning - Non-flammable solvent to apply on concrete, metal, wood

Source: KOR CORPORATION
600 W. 9th St., Dept. IEN, Gary, Ind.

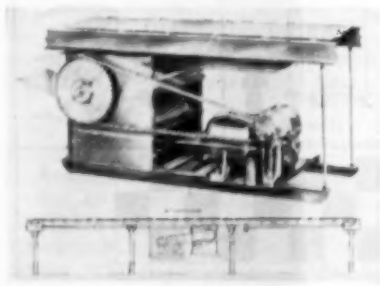
Data and prices upon request

Formula 13 concentrated and Formula 44 ready to use are two forms of a new liquid solvent for general cleaning duty. It can be applied by mop, dip, spray, brush. It is permitted to stand for 5 to 20 minutes. Then it is rinsed or hosed off with warm or cold water. It removes grease, oil, dirt, grime. The concentrate is mixed with water prior to using it in the proportion of one part to five of water. Packaging is in 5 to 55-gal. containers.

If you write maker identify as IEN-11743

Conveying - Central motor drive and take-up for belt or live rollers

Source: LAMSON CORPORATION
303 Lamson St., Dept. IEN, Syracuse 1, N. Y.



For existing conveyors

A conveyor belt rides over a combination motor drive and take-up assembly in this new power equipment. It has been designed for combination with roller gravity conveyors to form a belt or a live roller unit. It is available in 12 to 24-in. width in 2-in. increments. Wider assemblies are subject to special order. A ½ to 1-hp. motor, geared head design, provides a maximum effective pull of 300 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11744

A PAID NEWS ADVERTISEMENT BY H. R. WILLIAMS MILL SUPPLY CO.

ZIERS MOTION CONTROL SWITCH

Prevents Breakdowns, Fires, Lost Time

Installation in food plant.

Completely automatic in operation, no plant can afford to be without the protection of these new, dependable, automatic control switches.

ZIERS prevent the losses caused by overloading, jamming and equipment failures. Installed at LOW COST on conveyor systems, assembly lines, shafting equipment, belts, or single equipment units, Ziers Switches react immediately when motion is interrupted. Automatically, power is cut off and alarm signaled before damage to equipment occurs. Ziers Switches are simple to install by your own maintenance crew. No maintenance is required. They function perfectly at temperatures of 40° below zero to 400° above. Made to fit all sizes of shafts and speeds of 30 to 500 rpm. Complete explosion proof.

Why take chances. Write today for literature and LOW PRICES.

H. R. WILLIAMS MILL SUPPLY CO.
1320 Main Street Kansas City, Missouri

If you write maker identify as IEN-11745

How Metso Silicate Detergents behave with metals

An aluminum strip placed in a soda ash solution is immediately attacked but the corrosion stops when a few drops of silicate solution are added.

Metso Detergents protect aluminum, copper, brass, zinc, enamel and glazes.

Ask for a 16 oz. sample of Metso Detergent. Please describe what your cleaning operation is so that we can send you the proper Metso.

- Metso Sodium Metasilicate (hydrated and anhydrous)
- Metso 99 Sodium Sesquisilicate
- Metso 200 Sodium Orthosilicate

Philadelphia Quartz Company
1131 Public Ledger Bldg., Philadelphia 6, Pa.

METSO® *detergents*

If you write maker identify as IEN-11746

Photo courtesy General American Transportation Corporation

TOUGH VINYL COATING *Outlasts Ordinary Paints Up To 5 to 1*

. . . and you needn't own a covered hopper car to get results like this

A corrosion resistant vinyl coating supplied by The Glidden Company is helping General American Transportation slash refinishing costs on their new "Airslide" cars. With this new coating—based on BAKELITE Vinyl Resins—*cars can be completely refinished in just one day* under normal, outdoor conditions. And the coating resists chemicals and corrosion so well, it lasts up to 5 times longer than ordinary coatings!

Maybe *your* coating problem is just as tough though entirely different. BAKELITE Vinyl Resins could be the answer. Coatings based on these versatile materials go on easily and far outlast ordinary coatings. Acids, alkalies, common solvents, oils, water and corrosive atmospheres have little effect on them. There's a BAKELITE Resin for your job — inside or out, for structures or equipment, on wood, metal or masonry.

Learn more about BAKELITE Vinyl, Phenolic and Styrene Resins for coatings. For a free booklet, "BAKELITE Resin Coatings for General Industry," just write to Dept. ZJ-3.

Data courtesy of **The Glidden Company,** Railway Finishes Division, Cleveland 2, Ohio.

BAKELITE
TRADE MARK
VINYL, PHENOLIC, AND STYRENE RESINS FOR COATINGS

TRADE MARK

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.

If you write maker identify as IEN - 11748

AUTO-DIESEL
POWDERED METAL PARTS
WILL SAVE YOU MONEY!

It is possible to make large reductions, up to several hundred percent, by using AUTO-DIESEL Powdered Metal Parts, instead of machined parts. It is possible to supply parts molded to close tolerance and in this way save the cost of machining.

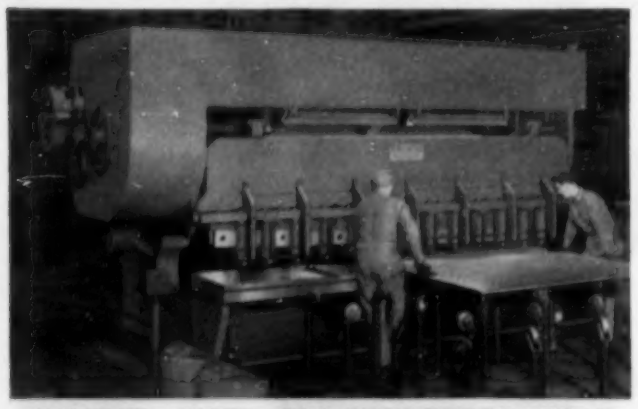
PARTS ARE LONG WEARING

AUTO-DIESEL Powdered Metal Parts are made to meet any conditions, particularly where heat, wear or corrosion are concerned. We can provide the metal composition best suited to do the job you want done. There are many places where AUTO-DIESEL Powdered Metal Parts will do a better job at less cost. Write us about your problems, sending samples or prints if possible.

Write to

THE AUTO-DIESEL PISTON RING CO.
3139 Superior Avenue • Cleveland 14, Ohio
"RINGS and SHAPES *Since* 1921"

If you write maker identify as IEN - 11749



BETTER CUTS MAKE BETTER FITS FOR ROAD MACHINERY BUILDER

The ease with which good, square, accurate cuts are obtained on their Steelweld Shear has made it very popular with a road machinery manufacturer. They like the fast, simple knife-clearance adjustment—snappy low-inertia clutch and brake—heavy tight-gripping hold-downs—electric foot switch control—precise, smooth-rolling back gauge—general overall ruggedness.

You, too, will like ultra-modern Steelweld Shears.

STEELWELD Pivoted Blade SHEARS CATALOG No. 2011

Send for free copy of catalog No. 2011.

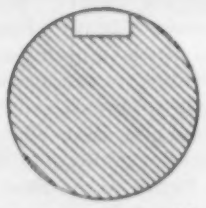
THE CLEVELAND CRANE & ENGINEERING CO.
4243 E. 282nd St., Wickliffe, O.

STEELWELD SHEARS

If you write maker identify as IEN - 11750

1¢ SALE!

of KEYWAYS by the minute



Believe it or not, you can cut any keyway from 1/16" to 1" in any bore from 1/4" to 3", by hand, with arbor press, in *one minute* for as little as *one cent* per keyway, with

du Mont
Minute Man
KEYWAY BROACH KITS

The du MONT CORPORATION, Greenfield, Mass.

MAIL FREE KEYWAY BROACH CATALOG and PRICE LIST N describing 25 standard kits, 23 standard sizes of broaches, 71 standard size bushings and a wide variety of production type guideless broaches and square broaches.

Name .....

Company .....

Address .....

If you write maker identify as IEN - 11751

Pump - Motor driven centrifugal with container and hose for coolant

Source: EASY INDUSTRIES
162 N. Clinton St., Dept. IEN, Chicago 6, Ill.

One of a line

Model FS-1A is a new assembly in the company's line of coolant circulating equipment. The new unit rates 2 gpm. when handling coolants equivalent to water at a 5-ft. working head. The pump is mounted in a 3½-gal. steel container equipped with 6 ft. of oil resistant hose, a bronze valve and a nozzle. The motor connects through a 6-ft. cord and plug to a power source. A switch is mounted on the container to open and close the motor circuit. Sealed bearings are employed in the motor.

If you write maker identify as IEN - 11752

Testing - Strain gage load cells to measure forces and weights exactly

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Dept. IEN, Philadelphia 42, Pa.

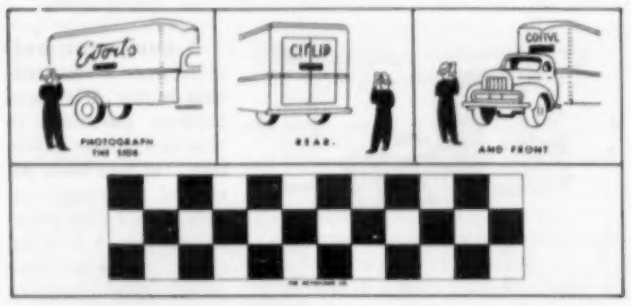
Technical data upon request

The company announces addition of five new strain gage load cells. The cylindrical units are available in three new Type-U design for loading in either tension or compression on load ratings between 0 and 50, 100 and 200 pounds. Two Type T-1 units are equipped with pulling eyes for tension loads from 0 to 100 and to 200 pounds.

Operation is on ac. or dc. at 4 to 8 volts. Input resistance is 120 ohms. Accuracy is within 0.25 per cent of full range. The load sensitive elements are hermetically sealed. Dimensions are 4 in. in diameter by 5¾ in. in height for the Type U-1 units, 2⅛ by 3½ in. for the Type T-1. Weights are 10 and 2 pounds. A special unit, available to specification, has a load range from 0 to 4 ounces.

If you write maker identify as IEN - 11753

Checker guide measuring 12 by 3 in. has been made up by Meyercord Company, 5323 West Lake St., Dept. IEN, Chicago



44, Ill., to assist truck owners lay out decalcomania signs. The owner attaches the guide to the side, rear and front of the truck and photographs the three truck positions. He sends these photographs to the company where the guide serves as a means to "size" the decalcomania signs.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11754

WRITE, WIRE or PHONE FOR YOUR CATALOG TODAY

BOLTS & CAP SCREWS
SOCKET, SET & CAP
NUTS, WASHERS
MACHINE SCREWS
SHEET METAL SCREWS
WOOD SCREWS
PIPE FITTINGS

- Class 3 Screws
- Dowel & Taper Pins
- AN Drilled Fillister Heads
- Studs, Standard & Special
- Screw Machine Products
- Piano Hinges

STAR STAINLESS SCREW CO.
Little Falls 4-2300
683 Union Blvd. • Paterson 2, N. J.
Direct New York Telephone: Wisconsin 7-9041

If you write maker identify as IEN - 11755

THIS SHOULD HAPPEN ONLY HALF AS OFTEN!

Eliminate half the cartridge replacements—select Cuno MICRO-KLEAN micronic filters.

Exclusive "graded density in depth" doubles dirt capacity, prevents clogging. Exclusive resinous impregnation and polymerization prevent shrinking, swelling, channeling.

When replacement *is* required—it's *quick* and *clean*. Housing easily disassembled.

Guaranteed densities: 10, 25, 50 microns. Capacities: from a few to over 800 gpm. Handles wide range of fluids, flow rates, viscosities.

Write for Bulletin MK-035. Cuno Engineering Corporation, 697 South Vine Street, Meriden, Connecticut.

CUNO
Fluid Conditioning
Removes More Sizes of Solids from More Types of Fluids

If you write maker identify as IEN - 11756

New, Revolutionary
METALLIZING GUN

MOGUL *Turbo-Jet*

Be sure to visit our Booth No. 1456 at the National Metal Exposition, International Amphitheater, Chicago, November 1 through November 5.

The Result of over 30 Years of Experience

The Mogul Turbo-Jet will spray and deposit an extremely dense coating using wires from 20 ga. to 3/16" dia. from the highest melting point molybdenum to the softest metals. No changing of worm gears or feed rolls.

General purpose gun to take care of all your spraying applications.

New Mogul Turbo-Jet is magnetic-controlled, with a spray range from 2½ inches per minute to 20 feet per minute.

Dual feed rolls individually driven, eliminate slippage and give more positive feed.

Will operate on acetylene, propane or natural gas 15 lbs. P. S. I.—low gas and oxygen consumption.

SPRAYS ALL METALS FASTER, WITH GREATER EFFICIENCY

The New Mogul Turbo-Jet is the most perfectly balanced gun ever developed and is the result of over 30 years of leadership in the metallizing field.

It is built for years of trouble-free, high performance service with a minimum of maintenance.

The New Mogul Turbo-Jet will spray all metals faster and with greater efficiency than any other spray unit ever built.

Prove Mogul Turbo-Jet's superiority right in your own shop. Free Trial test to metallizing users.

MOGUL

Write for further information today on the New Mogul Turbo-Jet. Ask about free trial test offer to Metallizing users.

METALLIZING COMPANY
of America
Dept. IEN
3500 West Carroll Avenue, Chicago 24, Illinois

If you write maker identify as IEN-11758

GET FASTER WORK, SAFER PLATFORM with WACO Scaffold Jacks

Waco Scaffold Jacks set up in seconds. Dual purpose head accommodates planks or stringers. Lightweight, folding construction permits quick handling and easy storage. Four adjustable sizes reach all wall and ceiling heights up to 17'6".

Used by every trade to reach work faster, finish up faster. Write for Bulletin SJ-1 for complete information.

Contact your nearest Waco office for ways to save time and money on all scaffolding requirements.

SALES • RENTALS • ESTIMATES

WACO MANUFACTURING COMPANY
3567 Wooddale Ave. • Minneapolis 16, Minn.
WORLD'S FASTEST SCAFFOLDING
Waco-May Co. Los Angeles — Licensees — Armson Iron Works Windsor, Canada

If you write maker identify as IEN-11759

there's a THIEF in your plant!

Working with plants throughout the country Elox found these interesting facts...

1. Some employees hide scrap
2. Some employees are afraid to report scrap
3. Some department heads won't admit the amount of scrap they actually have
4. Management didn't know how to solve the salvage problem

Today Elox equipped plants salvage 100% of scrap due to broken taps, drills, reamers, etc., profitably. Even on parts costing as little as 25c.

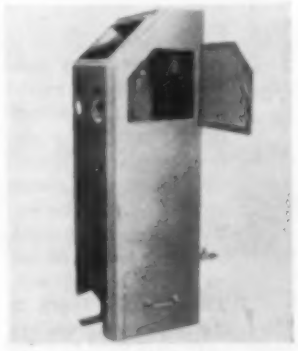
we can show YOU how!

elox corporation of michigan
724 N. Rochester Road • Clawson, Michigan

If you write maker identify as IEN-11761

Cleaning - Abrasive blast machine provides continuous dry sand feed

Source: LEIMAN BROS. INC.
102 Christie St., Dept. IEN, Newark 5, N. J.



Bulletin 6224

Hardening scale can be removed, metal, glass, rubber, plastic, wood products can be cleaned and a matte finish applied by means of this new cabinet type dry blast cleaning machine. Compressed air from a shop source is employed to pick up the abrasive and deliver it at high velocity through a flexibly suspended nozzle. The abrasive drives down on the work, then passes through a screen to be recirculated.

The operator manipulates the work by reaching into glove equipped arm openings in the front of the housing. He watches progress in the illuminated interior through a window. Doors are provided on both sides for loading and unloading. Operation is on 90 to 100-lb. air. Three sizes measure 18 by 24 in., 24 by 60 in. and 30 by 36 in. horizontally. Clearance under the nozzle is 13½ and 15½ inches. Overall height is 65 to 70 inches.

If you write maker identify as IEN-11762

Welding - AC arc machine is assembled in a fiber glass housing

Source: MARQUETTE MFG. COMPANY
307 E. Hennepin, Dept. IEN, Minneapolis 14, Minn.

A utility machine

Perma-Shield trade names new arc welding machine in which the transformer and controls are enclosed in a nonmetallic housing made of fiberglass reinforced plastic. The construction eliminates loss inducing currents. The housing is light in weight, corrosion resistant, weather proof.

Four models in the line rate 25 to 275 amperes. The machine produces a stable surge-free action to assist welders who are not fully experienced. Operation is on 220-volt 60-cycle single-phase ac. Each machine provides a bank of plug-in connections for heat output selection.

If you write maker identify as IEN-11763

A new aluminum finish has been developed, for roller application on storage tanks and similar surfaces, by Sherwin-Williams Company, 101 Prospect Ave. S. W., Dept. IEN, Cleveland 1, Ohio. Designation is Kem-Plate Aluminum Finish. The paint covers uniformly without conspicuous lap marks. Over spray is eliminated. The method speeds painting of metal structures and requires less scaffolding than brush application. Protruding objects, such as rivets, are covered without runs or sags.

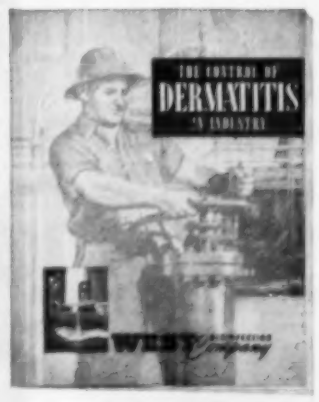
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN-11764

A PAID NEWS ADVERTISEMENT BY WEST DISINFECTING CO.

DERMATITIS CONTROL MANUAL

outlines industrial skin care methods



This free 28-page booklet is a complete, up-to-the-minute handbook on industrial dermatitis control. It treats the subject in considerable detail, yet is written in nontechnical style for easy reading by laymen as well as doctors and nurses. Anyone interested in reducing the costs of medical care, compensation, absenteeism, and the other losses dermatitis can cause, will find this booklet extremely helpful.

The booklet describes working conditions in 19 different industries, the hazards these conditions involve, the type of dermatitis common in each set of conditions, and recommended preventive measures. Condensed into convenient reference form are the experience and know-how gathered over many years by field workers and laboratory technicians of the West Disinfecting Company.

The book gains extra validity and value from West's daily contact with new industrial processes, chemicals, and jobs that are constantly complicating the dermatitis picture. This is essential reading which can lead to higher morale, increased production, and lower costs. Published by the West Disinfecting Company, Dept. 13, 42-16 West Street, Long Island City 1, N. Y.

If you write maker identify as IEN-11765

MODERNIZE YOUR WARNING SIGNAL SYSTEM with this NEW extra-compact powerful BENJAMIN SIREN!

TYPICAL APPLICATIONS OF THE BENJAMIN SIREN

for civil defense
for boiler alarms
for plant protection

This new siren is especially designed for modern multiple-signal installations, which overcome problems of atmospheric conditions, wind direction and industrial din. A small-yet-powerful high-torque, 10,000 r.p.m. motor and precision-machined housing makes possible extra-compact design. Famous Benjamin built-like-a-battleship construction prevents moisture from entering and assures long, trouble-free operation.

It's the 20th Century Pony Express!

FREE SIGNAL BOOK! Send for your copy of this most complete book on signaling! Benjamin Electric Mfg. Co., Dept. O, Des Plaines, Ill.

609

If you write maker identify as IEN-11766

Shells, beads, or American dollars—no enterprise is successful unless it shows a profit. Kester quality and performance assure you profitable production results at the lowest possible cost. To put more "wampum" in *your* "wigwam," always insist on Kester Solder!

WRITE TODAY for Kester's *NEW* 7-Page Informative Textbook, "SOLDER . . its fundamentals and usage"

KESTER

SOLDER COMPANY
4211 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN-11767

standardize on standard

UNBRAKO

SHOULDER SCREWS

UNBRAKO Shoulder Screws have numerous applications throughout industry. They can be used on stripper plates and pressure pads of die sets; as stationary or moving shafts or pivots; as stationary guides. These uniform, precision threaded industrial fasteners are carried in stock—¼" to ¾" diameter—by your local UNBRAKO industrial distributor. Write for literature. STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

UNBRAKO SOCKET SCREW DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-11768

Get these operation reports on
CRANE AND MONORAIL
HANDLING!

Bulletin M-27: fully illustrated story of how Allis-Chalmers handles metal faster at lower cost with a Whiting Trambeam Overhead Handling System.

Bulletin M-26: how Trambeam speeds up receiving, order filling, and shipping in three big warehouses of the Crucible Steel Co. of America.

Bulletin M-22: facts on how Reliance Electric and Engineering Co. speeds handling and saves money with Trambeam.

Send for these bulletins!

WHITING CORPORATION
15629 Lathrop Avenue, Harvey, Illinois

WHITING

If you write maker identify as IEN-11769

NOW Constant Tension From Start To Finish In Winding Roll-Fed Material

Never Before Anything So Efficient · Simple · Versatile

This is your chance to obtain a higher quality of wound material than ever before—and to save substantially on operating and maintenance costs at the same time.

You've never seen anything like the Hobbs "Alquist" Winder. It's in a class by itself. No other winding device can match it for simplicity, efficiency and flexibility.

OPERATES ON A. C.

Here is a squirrel cage three-phase A. C. motor, flange mounted to a gear reducer. You connect it *directly* to your rewind shaft. It is entirely independent of the main machine drive. You plug it into your present three-phase power outlet—no transformers or converters to bother with. Then you set a knob to the desired tension and walk away.

AUTOMATICALLY SENSES TORQUE

From the start to the very finish of your rewind operation, the "Alquist" constantly and accurately maintains the desired tension—protects even the most delicate materials from stretching, breaking or contracting. Automatically the "Alquist" senses the increase in torque as the roll diameter builds up and it slows down the speed of the shaft in direct proportion. Constant tension can be maintained in a roll build-up of as high as 10 to 1.

ECONOMICAL, FLEXIBLE

Power utilization of the "Alquist" is as high as 80%, approximately four times greater than other types of winders. This means important savings in energy. Maintenance is as slight as with any normal A. C. motor—there are no brushes or tubes to contend with. The "Alquist" is compact, saves you floor space. It is clean, there are no belts to slip and stir up dirt. It is flexible—connect it directly to the rewind shaft, or remotely by chain and sprockets. And it needs no supervision, saves you labor costs.

PROVED PERFORMANCE

The "Alquist" already has been proved in winding textiles, rubber, foil, cable, wire, plastics, paper—materials of almost any type or weight. And it can be adapted to meet any production requirement.

Find out for yourself just why the Hobbs "Alquist" Winder can make such a big difference—how it can give you increased production through *positive* quality control. Mail coupon below for free information. No obligation.

HOBBS MANUFACTURING CO.
40 Salisbury St., Worcester 5, Mass.
EST. 1883

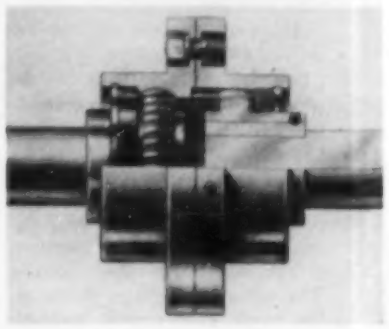
Kindly send complete information on the new Hobbs "Alquist" Winder.

Name _____ Title _____
Company _____
Street _____
City _____ Zone _____ State _____

If you write maker identify as IEN-11771

Drive - Flexible shaft coupling compensates for shaft misalignment

Source: PHILADELPHIA GEAR WORKS INC.
Erie Ave. & G St., Dept. IEN, Philadelphia 34, Pa.



Catalog C-540

The company announces general availability of its Sphereflex shaft coupling, previously manufactured for specialized applications. The external teeth in each coupling half are cut on a spherical arc. The internal teeth in the housing halves are cut with a straight root. The assembly maintains constant contact area under conditions of misalignment and no thrust load can develop through the coupling.

The standard design can be employed with angular misalignment to 3½ deg. on both sides of center. Special couplings are available for a total of 14 degrees. Stock sizes range from No. 0 to No. 6 with bore maximum at 1 in. in the smallest unit and 6¼ in. in the largest.

If you write maker identify as IEN-11772

Truck - Engine powered lift design, hydraulic travel and platform drive

Source: COLSON CORPORATION
340 Cedar St., Dept. IEN, Elyria, Ohio

Kick to start

Loads to 2 ton can be carried by this new engine powered, hydraulically driven Colson Handler. Control centers at a lever which is moved forward or back for travel in either direction and up or down to lift or lower a load. The 4-cycle, 6-hp., single-cylinder gasoline engine drives a pump to deliver oil to the hydraulic travel motor and the platform lift cylinder. The travel drive shifts itself between high and low speeds. Cushioned brakes are applied when the lever is released.

Steering is controlled at a vertical crank. The truck will turn in its own length. Dimensions of the power unit are 29 by 30 inches. The platform is 24 in. in width and is made in seven lengths from 30 to 72 inches. Lift height is 3 inches. Top travel speed is 4 miles per hour. List price with the platform is $1,395.

If you write maker identify as IEN-11773

Machine screws, tapping screws, drive screws and hanger bolts have been added to the line of fastenings made by Southern Screw Co., Dept. IEN, Statesville, N. C. Standard sizes, popular head sizes and finishes are carried in stock for immediate delivery.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11774

FAST PRODUCTION SOLDERING

A new high speed production Soldering Iron
VULCAN #450

150 watts ⅜" diameter
Plug type tip
Only 12⅝" overall (including tip)
STANDARD VOLTAGES

- Designed for FAST production lines
- Rapid soldering speeds
- Tips small enough (⅜" dia.) for work in confined quarters
- Special double baffle arrangement maintains comfortable handle temperatures
- Flared hardwood handles afford fatigue-resisting grip, while protecting fingers from contact with hot portions of tool

New high speed models also available in 200 watts, with either ⅜" or ½" dia. tips

Ideal for radio, television and electronic assembly work. Designed by the makers of the famous line of VULCAN soldering tools and "Even-Dip" solder pots for printed circuits.

VULCAN ELECTRIC COMPANY
DANVERS 8, MASS.

If you write maker identify as IEN-11775

...FOR A JOB WELL DONE!
KATO ENGINEERED ELECTRICAL EQUIPMENT

KATO ENGINEERING has been building Special Electrical Equipment and machinery since 1928. Our modern, well equipped plant produces the finest in generators and electrical machinery from the smallest to the largest.

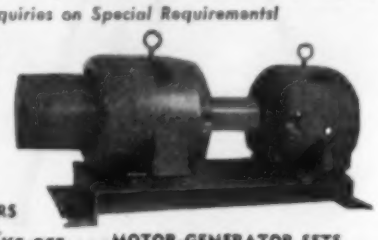
We Invite Your Inquiries on Special Requirements!

A. C. GENERATORS
Sizes from 100 watts to 300 K.W., in one or two bearings. Speeds of 720-3600 R.P.M., 60 cycles. Also 15-800 cycles, single and three-phase.

D. C. GENERATORS
Sizes ranging to 15 K.W.

ROTARY CONVERTERS
For Changing D.C. to A.C.

HIGH FREQUENCY CHANGERS
D. C. MOTORS UP TO 10 H. P.
D. C. MOTORS WITH A. C. TAKE-OFF
A. C. MOTORS, SINGLE PHASE 1, 1½, 3 H. P.

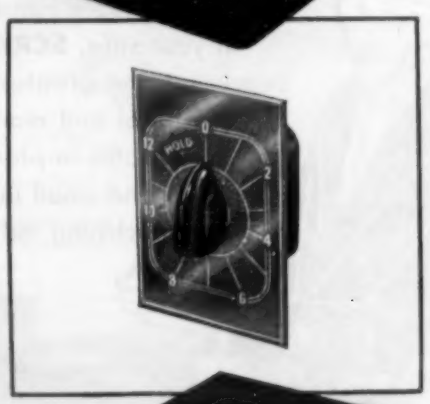


MOTOR-GENERATOR SETS
D. C. to A. C., A. C. to D. C. 25 cycles to 60 cycles, 60 to 400 cycles.

KATO Engineering Company
WRITE TODAY FOR INFORMATION!
1478 FIRST AVENUE MANKATO, MINNESOTA

If you write maker identify as IEN-11776

MARK-TIME "9000" Wall Time Switch



turns current off or on WHEN YOU'RE NOT THERE!

This Mark-Time switch is a good deal more than a great convenience . . . it saves you money! Because it remembers to turn the current off or on when you're not there to do it!

"9000" automatically controls circuits of store window lights, neon signs, hall and garage lights, attic fans, farm lighting systems . . . dependably turning them on or off at the time you set.

"9000" is easily mounted in any standard rectangular wall box. Movements only available for home or industrial heating controls.

Write today for full details and prices.

SPECIFICATIONS

Time ranges from 3 minutes to 12 hours. Rated at 20 ampere, 125 volt, 1 HP or 10 ampere, 250 volt operation. AC only. Available for either ON or OFF type operation. Hold feature also available—at HOLD position, current is ON, but timing mechanism does not operate until knob is turned from HOLD to a time period.

MARK-TIME
M. H. RHODES, INC.
HARTFORD, CONNECTICUT

Manufactured and sold in Canada by
SPERRY GYROSCOPE OTTAWA, Limited
3 Hamilton St., Ottawa, Ontario, Canada

If you write maker identify as IEN-11778

HELP YOURSELF
and your business
with these
ABLE LABEL AIDS

Advertise Identify Deliver Sell

Free samples of these labels will be sent on request. Identify the ones you want by number, using IEN's Specific Information Reader Service Form.

1 Pressure sensitive for product labeling
2 Advertising and brand for effective promotion
3 Addressing and mailing stock designs or special
4 Packaging and identifying for consumer products
5 Heat seal labels and tapes for hard-to-label surfaces
6 Collection and courtesy for response and good will
7 Wrapper and bands in strip or roll form
8 Spot carbon labels save addressing time
9 Embossed foil for luxury effect
10 Hi-Gloss Kromkote reflects quality
11 Sales gimmicks all types and shapes
12 The Able-Labeler our house publication

allen hollander co., inc.
385 Gerard Ave., Dept. IEN, New York 51, N. Y.

If you write maker identify as IEN-11779

FOR CUTTING EVERYTHING
BARS, ROUNDS and PIPES
FAST, ACCURATE and ECONOMICALLY

it's
KELLER
POWER
HACK SAWS

Capacities 3½" x 3½" to 9" x 9"

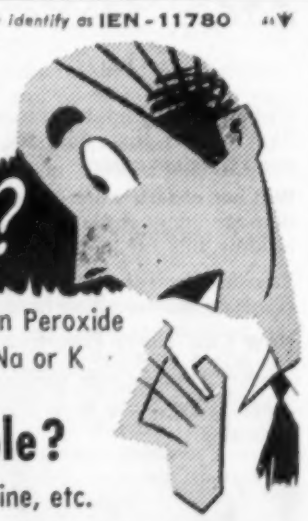
Reduce your cutting costs. Let the simple, efficient design of nine Keller Power Hack Saw models give you maximum output at a minimum investment.

Keller Power Hack Saws are the choice of thousands. Investigate and you will find a Keller to meet your requirements. Write for illustrated bulletin and low prices today!

Sales Service Machine Tool Co. SSMT
PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS
2365 UNIVERSITY AVENUE • ST. PAUL W4, MINNESOTA

If you write maker identify as IEN-11780

IS YOUR FILTER PROBLEM
baffling?



H_2SO_4 Hydrogen Peroxide
Fuming HNO_3 Molten Na or K
Caustic Cl_2

OR IS IT **manageable?**
Water Air Gasoline, etc.

MMC offers permanent filter media engineered for optimum efficiency in handling countless exposure conditions, some of which are mentioned above.

For further information request Bulletin

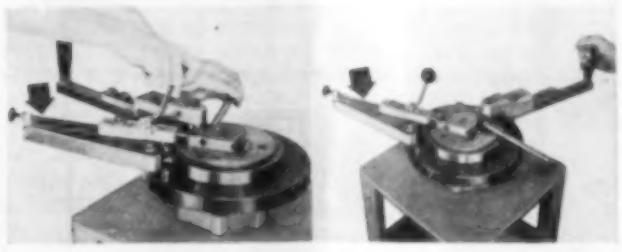
Another filtration engineering service of
MICRO METALLIC CORPORATION
106-C Sea Cliff Ave. Glen Cove, N. Y.

PALL
The Pall Filtration Companies
Micro Metallic Corporation | Porous Plastic Filter Co. | Aircraft Porous Media, Inc.

If you write maker identify as IEN-11781

Bending - Hand operated machine for steel bar to ⅝ in., tube to ½ in.

Source: O'NEIL-IRWIN MFG. COMPANY
547 Eighth Ave., Dept. IEN, Lake City, Minn.



Furnish with specified clamp block

Work is held in a new clamping device now available for the Di-Acro hand operated bending machines No. 1 and 1A. Tube, angles, channels, extruded sections can be secured in the toggle operated clamp. The new attachment applies on the machine as shown in the illustration. It is adjustable by turning a thumb screw. It is closed and released by operating its toggle lever. A bend is made, after the work is clamped, by rotating the bending lever around the base to a previously set stop position. This lever is then returned to its starting point and the clamp released to free the bent piece.

If you write maker identify as IEN-11782

Battery - Lead acid design with charger for walkie type trucks

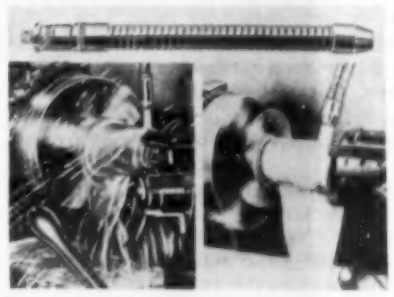
Source: K-W BATTERY COMPANY
3555 W. Howard St., Dept. IEN, Skokie, Ill.

Now in stock

Rating is 275 amp. hr. for this new Charger 6-SPC-11 storage battery. It is characterized by its integral charger that remains with it permanently and can be plugged into a 110-volt ac. power source at any time. The charger can be left on without damage to the battery. There is no need to remove the battery from the truck for charging. Overall dimensions are 26½ by 7¾ by 30⅝ inches. List price is $550.

If you write maker identify as IEN-11783

Splashing stops when you apply the new Mel-O-Flo coolant aerator at the nozzle points delivering coolant in your metal working machines. The new unit connects on the coolant line, delivers aerated coolant in a smooth penetrating flow. Melard Mfg. Corp., 432 Austin Place, Dept. IEN, New York 55, N. Y., is the manufacturer.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11784

LINEMASTER
"LEKTRO-LOK"
FOOT SWITCH

SMALL..
SENSITIVE..
SAFE!

ONLY $5.25

Lektro-Lok is dependable because it's automatically safe — a mechanical interlock allows only one circuit to function at a time! Lektro-Lok operates on a teeter-totter principle with selective circuits — yet a single cord receptacle eliminates costly harness assemblies.
Lektro-Lok is lightweight — only 10 oz. — but built for stamina, with a rugged stamped metal case. You can depend on Lektro-Lok to give you years of trouble-free service — it's made by LINEMASTER, the leader!
Let us quote on your special problems.

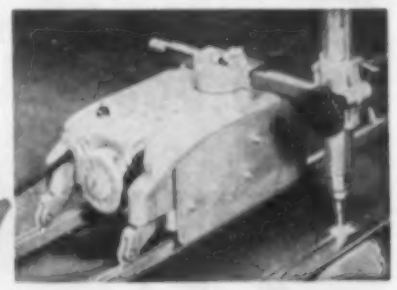
Write today for catalog and price list

LINEMASTER SWITCH CORP.
426 Woodstock Terrace
Woodstock, Conn.

If you write maker identify as IEN-11785

SAVE TIME AND MONEY with this

OXWELD
Trade-Mark
MACHINE CARRIAGE



Here is a new lightweight machine carriage—the OXWELD CM-45—that will mechanize literally dozens of oxy-acetylene jobs in large or small metalworking shops, and do them better than the most skilled hands.

You save money when you let the CM-45 do your cutting, beveling, flame-treating, or special welding jobs. Its efficient operation saves oxygen and acetylene as well as time, and rejects are reduced to a minimum.

For further information, call your nearest LINDE representative today. Ask for a free copy of Form 7839. No obligation.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 E. 42nd St., New York 17, N.Y. Offices in Other Principal Cities
In Canada: Dominion Oxygen Company, Limited, Toronto

"Oxweld" is a trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN-11786

J-M BLAZECRETE speeds refractory repairs...

That's why it pays you to use this hydraulic-setting refractory for temperatures to 3000F

REPAIR old refractory linings—or build new ones—quickly and economically with Blazecrete*. For troweling, just mix Blazecrete with water as you'd mix ordinary concrete . . . then slap-trowel it in place. When gunned, Blazecrete adheres readily with a minimum of rebound loss. Either way, Blazecrete goes on fast . . . without ramming or tamping.

Three types of hydraulic-setting Blazecrete are available.

3X BLAZECRETE—For temperatures through 3000F. Excellent for forge furnace linings, lime kilns, burner blocks, soaking pits, and industrial boilers.

STANDARD BLAZECRETE—For temperatures through 2400F. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE—For temperatures through 2000F. An insulating refractory . . . light in weight, low in thermal conductivity.

For full details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

*Reg. U. S. Pat. Off.

Johns-Manville BLAZECRETE
BUILDS BETTER REFRACTORY LININGS

If you write maker identify as IEN-11787

standardize on standard

HALLOWELL SOLID STEEL COLLARS

now size-marked for easy identification

42 stock sizes—each marked with shaft diameter for easy identification—are now available at your HALLOWELL distributors'. And these precision machined solid steel collars—in sizes from 3/16" to 3" inclusive—have the famous self-locking UNBRAKO Socket Set Screw to assure positive positioning on the shaft.

Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

HALLOWELL POWER TRANSMISSION DIVISION
SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 11788

BASIC SWITCH

Gives You More Than Just Long Life!

- Maintains accurate repeatability and positive snap-action . . . even at 1,500,000 cycles and over!
- Long life lowers switch costs . . . minimizes "down-time" and increases efficiency of operation.
- Durable, compact plastic case permits great flexibility of application. Available in a wide selection of models, including "reset". Rated at 10 amps 125/250 v. AC; 30 v. DC inductive.

WRITE FOR DETAILS IN DATA SHEET STK-10

see our catalog in PRODUCT DESIGN FILE or write for copy

ELECTRO-SNAP SWITCH AND MFG. CO.
4224 West Lake Street, Chicago 24, Illinois

If you write maker identify as IEN - 11789

NEW SKIL 1/4" DRILL

MODEL 75

55% more powerful . . . yet lighter in weight!

Big portable drill news here! A *new* SKIL heavy-duty drill . . . 55% more powerful, yet actually *lighter!*

Here's your short cut to reduced time and labor costs . . . to increased production output! Unequalled performance . . . top operating power, longer life. Capacity: ¼" in steel, ½" in wood. Choice of 7 speeds, 500 to 5000 r.p.m. . . . to meet your needs.

Look over these important features:

- All anti-friction bearings—for greater efficiency and low maintenance.
- Motor 55% more powerful, yet lighter than previous model.
- Contour-fit handle for easier and more comfortable handling.
- Larger inspection plate, easily removed for checking and cleaning.
- New molded rubber strain relief—protects cord against fraying or breakage at drill cord attachment joint.
- Handy, safety-designed trigger lock for continuous operation—side location for easy operation.
- Convenient chuck key holder on cord.

FREE! Convincing Demonstration and Trial Prove "SKIL is the answer" to Your Production Bottlenecks! Send Coupon Today!

SKIL PORTABLE TOOLS

Made only by SKIL Corporation formerly SKILSAW, Inc.
5033 Elston Avenue, Chicago 30, Ill.
3501 Dundas Street West, Toronto 9, Ont.
Factory Branches in All Leading Cities

MAIL THIS COUPON!

SKIL Corporation, Dept. IEN-104
5033 Elston Avenue, Chicago 30, Illinois

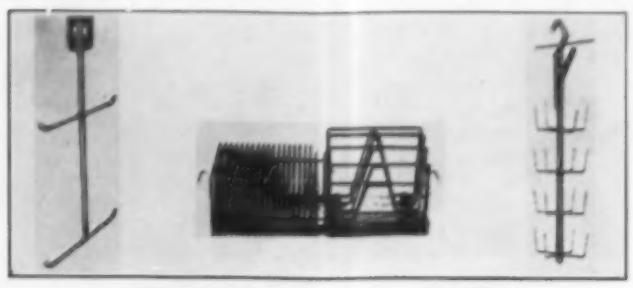
☐ I would like a demonstration and trial . . . FREE!
☐ Please send me illustrated literature on SKIL tools!

Name _____
Company _____
Street _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 11791

Handling - Fixtures, hangers, racks to carry work on a production line

Source: NATIONAL RACK CO., INC.
1109 Stewart Ave., Dept. IEN, Flint, Mich.



Illustrated bulletin, "Take a Tip"

Illustrated are three new designs, typical of special work handling equipment the company is prepared to supply, to carry work on a conveyor line through operations such as painting, plating, anodizing. The company has established an engineering design department that develops the fixture, hanger or rack required for a given product in a specified production operation. These designs are then put through the company's production department for completion ready to go into service.

The equipment is coated with Plastisol insulation to prevent damage leading to corrosion in contact with the work being carried. Removable tips or work holders are interchangeable so a given fixture can be adapted to a variety of jobs.

This description duplicates IEN-10552-54 which was published in error under the name of another manufacturer. Ed.

If you write maker identify as IEN - 11792

Strapping - Wire tying machines to apply and tension oval section wire

Source: RENOIS TYING MACHINES INC.
1956 Hawthorn Ave., Dept. IEN, Melrose Park, Ill.

Available for sale or annual rental

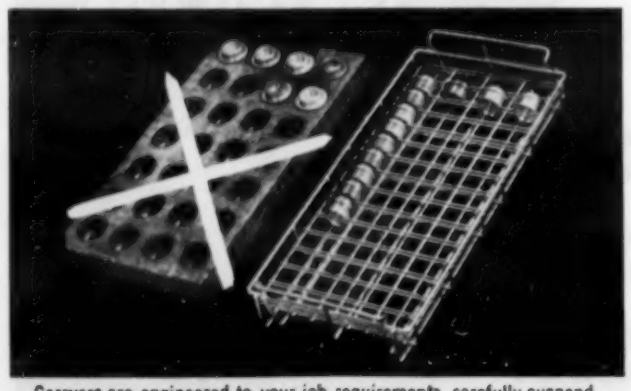
The economy of wire and the physical characteristics of flat steel strapping are combined in the oval section wire that is applied and tensioned by application of these new hand operated machines. Three designs, from left to right in the illustration, include the Super Step Gripper, the Quick and the Standard Step Gripper. The first and third are available in several sizes for 12 to 19-gage wire. The Quick model uses 17½ to 19-gage wire. All three take the wire directly from a coil located near by.

The Gripper designs secure the wire end in the gripper on the left hand side of the machine. The wire is then looped around the object to be tied and is inserted in the right-hand gripper. It is tensioned by pulling and releasing the operating lever. Then the machine makes the twist and trims the knot. Excess wire is returned to the coil.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11793

"Carryers" strike at costs missed by other handling means



Carryers are engineered to your job requirements, carefully suspending each part for protection of all critical surfaces. Contrasted to ordinary wire baskets, wood boxes, trays, or tote bins, Carryers become an integral part of your conveyor system. They convey parts through all processing stages as well as the cleaning cycle, eliminate non-productive labor time and costly scrap due to careless handling. Carryers do not become contaminated. Many have been in service 15 years. They will pay for themselves in 30 days on scrap savings alone. Carryer bins also available for bulk handling of non-critical parts.

this free brochure may help you.

MID-WEST

MID-WEST WIRE PRODUCTS CO., INC.
27 Years of Parts Handling Experience
2577 FENKELL • DETROIT 21, MICH.

If you write maker identify as IEN - 11794

Reconditioned

INTERCOMS

with New Equipment GUARANTEE for

- BUSINESSES • STORES
- FACTORIES • HOMES
- INSTITUTIONS • CAMPS
- CHURCHES • SCHOOLS
- FARMS & NURSERIES
- DOCTORS & HOSPITALS and MANY OTHERS.

COMPLETE SYSTEMS for as little as $19.95

Manufacturer offers nationally known Talkatron, 2-way talking, 2-station inter-communication sets, regularly selling at $40.00, for $19.95 while they last. Small compact units, housed in handsome grey wrinkle, sturdy steel cabinets. Completely rebuilt and reconditioned. New tubes and parts. Carries same written guarantee as new equipment. Operates on AC or DC. No batteries. Easy to install. Can be used as paging system. High amplification. So sensitive it picks up a whisper or even the drop of a pin. Transmits voice clearly and distinctly. Can be operated at distances up to 1000 feet. Units can be used in systems of 2 to 100 stations, 2-station set with instructions and guarantee (but without wire) $19.95 F.O.B. Chicago factory. The following wire must be used with the system—3-conductor inside wire 5c per ft.; outside wire 8c per ft. Extra stations only $9.95 ea. Base (shown above) with switch to individually select up to 5 other stations, $7.95. For information on more complex systems ask for catalogue of complete line of intercommunication equipment. *

Cambridge Co. 2561 N. Clark, Chicago 14, Ill.

If you write maker identify as IEN - 11795

Fewer men, less handling time, less space to stow. In Busch Stadium, home of The St. Louis Cardinals, U. S. Fiberthin keeps the "diamond" bone dry. Diamond cover made by Bemis Bros. Bag Co., St. Louis, Mo.

lighter, stronger, wears much longer!

For All Tarps, Tents, Fabric-Type Protective Covers

U.S. *fiberthin**

The Finest in Coated Vinyl

Unbelievably high tear strength comes from nylon ribbon-like threads that shift to meet strain within the vinyl protective covering.

Will not absorb water-weight. Impervious to almost every damage agent there is in air; temperature change; acids, mildew, oils, etc.

Pays for itself in important long-run savings—on replacement, on manhandling hour costs.

How Can These Fiberthin Features Benefit You?

• Lightweight • Weatherproof • Salt-water repellent • Resists oil, gasoline, alkalies • Waterproof • Crack and split-resistant • Flame-resistant • Tear resistant • Freeze Resistant • Non-hardening.

*Patent No. 2,619,705—December 2, 1952

Salt water, machine-oil resistant—Fiberthin ship-hatch tent, by Gordon Holcombe Co., San Francisco, California.

Fiberthin Tarp allows more cargo weight. Briggs Transportation Co. Tarpaulin by Aero Canvas Prods. Co., Indianapolis, Ind.

U. S. Fiberthin is made in a variety of weights, widths and colors. Write to us, or to your nearest distributor.

US RUBBER

UNITED STATES RUBBER COMPANY
Coated Fabrics Department, Mishawaka, Indiana

If you write maker identify as IEN-11797

How cost-wise buyers rate STANDARD STOCK GEARS

GOOD BETTER BOSTON Gear

2,000 TYPES AND SIZES

IN STOCK AT 92 BOSTON GEAR DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

Get the 384-page BOSTON Gear Catalog . . . industry's most valued "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN-11798

B&W Type FM Boiler saves $1000 a month for AMERICAN-LAFRANCE-FOAMITE Corporation

One of the world's largest manufacturers of fire-fighting equipment has reduced its fuel and operating costs at the rate of $12,000 per year by installing a B&W Integral-Furnace, Type FM, and making other related plant improvements. It is estimated that in 6 years this B&W steam generator will pay for itself.

Tied in with the plant's existing high-pressure steam system, it will produce 8,000 lb of steam per hour in heavy-load periods and will operate alone to furnish power for low-load periods. The biggest single saving effected by this installation is fuel. Formerly a large portion of the fuel burned during the summer, averaging about 50 tons per week, was used for banking and actually served no useful purpose. The automatic oil or gas-firing feature of the FM Boiler eliminates banking. Further, the unit's compact design and completely automatic features, including the flame-failure detection device, releases operating and maintenance personnel for other duties.

The completely shop assembled, FM Boiler is virtually on the line upon arrival—needing only hooking up of service connections before it goes to work. This widely-used B&W unit is suitable for a wide range of industrial, commercial, institutional, and other classifications. It is available in standard sizes for loads ranging to 36000 lb of steam per hour, at pressures to 235 psi. It is available for higher pressures. FM units in service, and on order represent a steam output of over 9,000,000 lb per hour and considerable savings in fuel and operating costs that are well worth serious consideration.

BABCOCK & WILCOX BOILER DIVISION

G-638

I WISH I HAD...

(Continued from Page 120)

WAREHOUSING . . "I wish I had contact with a manufacturer desiring to maintain a small warehouse stock in the East for prompt shipment to New York, Philadelphia, Baltimore, Washington. I can offer low cost storage facilities and experience in simple assembly, packaging and shipping. I am located in Blairstown, N. J." **IEN W-105**

SURPLUS . . "I wish we had a buyer for a National Pre-Mill 16 oz. injection molding machine that we have used for the past two years in experimental work. We will be glad to send a copy of the complete specifications and data on equipment included upon request. The machine is located in Scranton, Penna." **IEN W-106**

SURPLUS . . "I wish we had a buyer for all or a part of our surplus stocks comprising 27,000 lb. of domestic and foreign Fiberglas yarn and 20,000 lb. of 0.035-in. 28O aluminum wire. Both are in storage in Riverside, Calif." **IEN W-107**

SURPLUS . . "I wish we had a buyer for a 2¼ by 8-in. Goulds single-acting triplex hydraulic pressure pump. It rates 18 gpm. at 2,000 lb. on crankshaft speed of 44 rpm. It is available with a 35-hp. motor and is in storage in Wooster, Ohio." **IEN W-108**

SURPLUS . . "I wish we had a buyer for a Standard-Knapp Type-420 top and bottom case sealer that will handle cases measuring about 21 by 19 by 21 in. and smaller. The machine is about 6 months old. We have found it advisable to purchase two smaller machines because of the many various sizes of carton that we use. The machine is in first class condition in storage in Wooster, Ohio." **IEN W-109**

SURPLUS . . "I wish we had a buyer for one or more of three conveyor belts made of ½-in. mesh No. 10 gage Nichrome-V wire with rod reinforcement. The pieces measure about 44 ft. by 15 in., 45 ft. by 7 in. and 51 ft. by 15 inches. They are in storage in Brooklyn, N. Y." **IEN W-110**

SURPLUS . . "I wish we had a buyer for a Vapor Blast machine complete in a single cabinet assembly. The machine is at present in storage in Brooklyn, N. Y." **IEN W-111**

SURPLUS . . "I wish we had a buyer for 60 blanks of Mallory No. 3 alloy for seam welder rolls. The blanks are 8 in. in diameter by $\frac{7}{16}$ in. in thickness. They are in storage in Oak Ridge, Tenn." **IEN W-112**

SURPLUS . . "I wish we had a buyer for all or a part of our surplus 35-ton stock of $\frac{3}{16}$-in. galvanized steel wire. Some is Electro-galvanized and some is hot-galvanized. All is made of SAE 1010 steel by Bethlehem and Continental. The stock is in storage in Detroit." **IEN W-113**

SURPLUS . . "I wish we had a buyer for 500,000 discs made of cold rolled steel. They measure $1\frac{17}{32}$ in. in diameter by 0.062 in. in thickness. They could be used to make space washers. The discs are in Whitman, Mass." **IEN W-114**

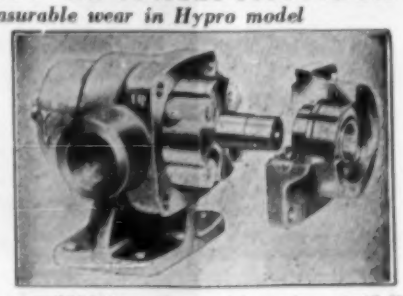
SURPLUS . . "I wish we had a buyer for a Type-SG Mott sand blasting machine equipped with motors, cyclone and hoses and an internal conveyor belt for operation on 220-volt three-phase 60-cycle ac. The machine is in storage in Denver, Colo." **IEN W-115**

If you write maker identify as IEN-11800

A PAID NEWS ADVERTISEMENT BY HYPRO ENGINEERING, INC.

BRONZE PUMP PASSES 5000 HOUR TEST . . .

No measurable wear in Hypro model



A continuous 5000 hour test with water at 40 lbs. pressure has produced no measurable wear in the Hy-Car rubber rollers or case of the new Hypro Model 4300 bronze pump, according to its manufacturer. The Hypro roller-type pump is particularly suited as a replacement for conventional gear and centrifugal pumps, where these fail at water circulation applications because of lubrication or pressure limitations.

Designed to meet industrial water recirculation requirements, the pump is engineered for continuous duty service through use of sealed, permanently lubricated ball bearings. An additional feature is a pressed fit of the stainless steel shaft into the inner ball bearing race to restrict lateral movement of the rotor, minimizing end thrust wear within the pump. Performance tests show friction is held to a minimum by the design.

The bronze scoop rotor and Hy-Car rollers deliver approximately 7 gals. per minute at 50 lbs. pressure and 1750 R.P.M. Pressure range is 0 to 75 psi. The pump is furnished with ¾" ports, recommended speeds to 1800 R.P.M. Weight is only 4½ lbs., net.

For literature and price information, write Dept. 103, **Hypro Engineering Inc.**, 404 No. Washington Ave., Minneapolis 1, Minn.

If you write maker identify as IEN-11801

Roll a NEW Floor OVER the old with

Redi-Roll

Factory Prepared, Heavy Duty Plastic Resurfacer

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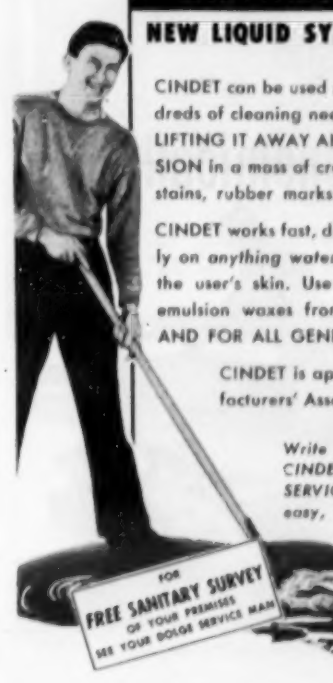

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OCTOBER 1954

INDEX TO ADVERTISERS

A

A'G'A' Division of Elastic Stop Nut Corp. of America 78
Abart Gear & Machine Co. 42
Acme Electric Corp. 66
Acme Industrial Company 95
Acme Steel Company 101
Acromark Company 42
Acushnet Process Company 79
Adams, R. P., Co., Inc. 3, 4
Aetna Ball & Roller Bearing Co. 76
Aetna Plywood & Veneer Co. 42
Agat Detroit Company 14
Aircraft-Marine Products, Inc. 65
Air-Hydraulics, Inc. 40
Air-Mite 22
Air Placement Equipment Co. 63
Air Reduction Co., Inc. 99
Ajax Electric Company 83
Ajax Flexible Coupling Co., Inc. 52
Akro-Mils, Inc. 4
Alan Wood Steel Company 58
Allen, Alva F. 30
Allen-Bradley Co. 12
Allied Metal Specialties, Inc. 29
Allied Radio 45
Allis-Chalmers Mfg Co. 5, 11
Almco 33
Aluminum Co. of America 29
Aluminum Ladder Company 20
Alvey-Ferguson Company 120
American Air Filter Co., Inc. 73
American Chain & Cable 23, 55
American Cystoscope Makers, Inc. 70
American Gilsonite Company 57
American Machine & Foundry Co. 49
American Machine and Metals, Inc., Riehle Division 8
American Metal Products Co. 75
American Monorail Company 6
American Platinum Works 68
American Pulley Company 83, 95
American Society For Metals 3
American Welding & Mfg. Co. 56
Ames, B. C., Co. 25
Ames Iron Works 40
Amidon Engineering Company 38
Ampco Metal, Inc. 9
Anaconda Wire & Cable Co 3, 10, 13
Anderson, V. D., Company 109
Apco Mossberg Co. 94
Arcos Corporation 38
Armco Drainage & Metal Products, Inc. 51
Armstrong-Brav & Company 61
Armstrong-Blum Mfg. Co. 34
Aro Equipment Corp. 59
Arrow Products, Inc. 68
Artos Engineering Co. 47
Askania Regulator Company 35
Associated Metal Fabricators 52
Atkomatic Valve Co. 40
Atlas Industrial Corporation 67
Atlas Press Co.—Clausing Div. 106
Aurand Mfg. & Equipment Co. 68
Aurora Pump Co. 18
Auto-Diesel Piston Ring Co. 112
Automotive & Aircraft Div. 55
Avery Adhesive Label Corp. 26
Ayerst Laboratories 76

B

Babcock & Wilcox Company, Boiler Division 117
Babcock & Wilcox Co., Refractories Division 41
Babcock & Wilcox Co., Tubular Products Div. 99
Bakelite Co., A Div. of Union Carbide & Carbon Corp. 105, 111
Baldwin-Lima-Hamilton-Corp. 67
Ballymore Company 78
Barber-Colman Company, Wheelco Instruments Div. 41
Barksdale Valves 18
Bay West Paper Company 26
Bead Chain Manufacturing Co. 78
Beatty Machine & Mfg. Co. 77
Behr-Manning Corp. 60
Bellows Company 91, 103
Beltraction Company 106
Benchmaster Manufacturing Co. 89
Benjamin Electric Mfg. Co. 113
Binks Mfg. Co. 44
Blackburn, Jasper, Corp. 39
Black & Decker Mfg. Co. 16
Black Drill Co., Inc. 50
Black & Webster, Inc 56
Blue M Electric Company 82
Brainard Steel Division 57
Breeze Corporations, Inc. 90
Breuer Elec. Mfg. Co. 53
Bros, Wm., Boiler & Mfg. Co. 40
Bristol Co. 97
Brookville Mfg. Co. 72
Brown Engineering Company 13
Browning Manufacturing Co. 3
Brown, W. R., Corp. 19
Brulin & Co., Inc. 55
Bokum Tool Company 103
Bond Foundry & Machine Co. 59
Borroughs Mfg. Co. 75
Bostitch 110
Boston Gear Works 82, 117
Bowser, Inc. 101
Buck Tool Company 104
Buda Company 82
Buell Engineering Company 7
Burgess-Manning Co. 68
Burndy Engineering Co., Inc. 102
Buschman, E. W., Co. 84
Bussmann Mfg. Co. 22
Bustin Firm Grip Grating Corp. 46

C

C & H Supply Company 24
Calculograph Co. 25
Caldwell Company, Inc., The 87
Cambridge Company 116
Cambridge Instrument Co., Inc. 18
Cameron Machine Co. 102
Camloc Fastener Corporation 32
Campbell Machine Division 23
Cannon Electric Co. 82
Capco 36
Carboloy, Dept. of General Electric Co. 9
Carborundum Company 89, 119
Carpenter Steel Co. 6, 97
Carrier Conveyor Corporation 31
Catawissa Valve & Fittings Co. 119
Cailcate Company, The 98
Cellite Corporation 70
Cellusuede Products, Inc. 8
Century Electric Company 63
Cerro de Pasco Corporation 19
Chain Belt Company 7
Chempump Corporation 78
Chester Hoist Div., The National Screw & Mfg. Co. 81
Chicago Bridge & Iron Co. 4
Chicago Eye Shield Co. 14
Chicago Float Works 103
Chicago Mfg. & Distributing Co. 80
Chicago Pneumatic Tool Co. 109
Chicago Rivet & Machine Co. 12
Chisholm-Moore Hoist Division 76
Cincinnati Gilbert Machine Tool Co. 71
Clair Mfg. Co., Inc. 42
Clarin Manufacturing Company 79
Clark Bros. Bolt Company 71
Clebar Watch Agency 102
Clements Mfg. Co. 53
Cleveland Tramrail Division, The Cleveland Crane & Eng. Co. 47, 112
Cleveland Vibrator Co. 76
Clifford Manufacturing Co. 40
Clifton Precision Products Co. 105
Climax Molybdenum Co. 4
Cling-Surface Co. 76
Clipper Manufacturing Co. 110
Coffing Hoist Co. 95
Colonial Rubber Company 72
Colorado Fuel & Iron Corp. 34, 88, 94, 110
Colson Corporation 90
Columbus McKinnon Chain Corp. 76
Comar Electric Company 58
Combustion Control Division, Electronics Corp. of America 33
Commander Mfg. Co. 92
Cone-Drive Gears Div., Michigan Tool Company 32
Continental Steel Corp. 48
Continental Tool Works Div. of Ex-Cell-O Corp. 93
Conveyor Specialty Co., Inc. 71
Coppus Engineering Corp. 70
Cords Ltd., Div. of Essex Wire Corporation 87
Cover, H. S. 27
Coxhead, Ralph C., Corp. 94
Crane Co. 4
Crane Packing Company Lapmaster Div. 69
Crane Packing Co. 99
Cro-Plate Company, Inc. 54
Cullen-Friestedt Company 37
Cunningham, M. E., Co. 5
Cuno Engineering Corp. 112
Curtis Development & Mfg. Co. 31
Curtis Pneumatic Machinery Div. of Curtis Mfg. Co. 9
Curtis Universal Joint Co., Inc. 86
Cutler-Hammer, Inc. 88
Cyclone Fence Division 69

D

Danly Machine Specialties, Inc. 49
Darnell Corp., Ltd. 38
Dart Union Company 32
Day Company, The 101
Dayton Rogers Mfg. Co. 22
De Bothezat Fans Div. American Machine & Metals, Inc 120
Decker Manufacturing Company 60
Defiance Machine and Tool Co. 7
Delpark Corp. 77
Deluxe Metal Furniture Co. 76
Derby Sealers, Inc. 21
Despatch Oven Co. 96
Detex Watchclock Corporation 34
Detroit Tap & Tool Company 85
DeVilbiss Company 57
De Walt, Inc. 49
DeZurik Shower Company 8
Dico Company 28
Dillon, W. C. & Co., Inc. 108
Dodge Mfg. Corp. 53
Dolge, C. B., Co. 117
Dollin Corp. 62
Doyle Vacuum Cleaner Co. 36
Dravo Corporation 50
DriAire, Incorporated 58
Drying & Concentrating Co. 93
Duff-Norton Mfg. Co. 2
Du-Lite Chemical Corporation 66
du Mont Corp. 112
Dumore Company 100
Du Pont, E. I., De Nemours & Co. 15
Durable Manufacturing Co. 65
Durant Manufacturing Co. 24
Dustex Corporation 40
Dyken Manufacturing Co., Inc. 10

E

Eastern Tool & Mfg. Co. 46
Eastman Kodak Co. 49, 59, 75
Easton Car & Construction Co. 92
Eclipse Fuel Engineering Co. 38
Economy Engineering Co. 28
Edmont Manufacturing Co. 96
Edmund Scientific Corporation 120
Elastic Stop Nut Corp. of America 67
Elco Tool and Screw Corporation 60
Electric Auto-Lite Company 80
Electric Blower Company 8
Electric Hotpack Company, Inc. 22
Electric Wheel Company 48
Electroline Co. 67
Electro-Snap Switch and Mfg. Co. 116
Elgin National Watch Co.—Abrasives Division 95
Elliott Company 25, 83
Elox Corporation of Michigan 113
Engelberg Huller Company, Inc. 66
Enterprise Machine Parts Corp. 39
Equipto Division of Aurora Equipment Company 27
Erico Products, Inc. 74
Eriez Manufacturing Company 60
Evans & Company 43
Ex-Cell-O Corp. 21

F

Faber-Castell, A. W., Pencil Co., Inc. 3
Fairbanks Company 78
Fairfield Manufacturing Co. 34
Farralloy Company 120
Fastener Corporation 72
Faultless Caster Corporation 93
Fawick Airflex Division Federal Fawick Corp. 67
Federal-Mogul Corporation 54
Federal Sign and Signal Corp. 84
Felters Company 12
Ferguson, Harry J., Company 44
Ferro Corporation 85
Finnell System, Inc. 22
Fisher Governor Co. 30
Flash Box Opener Co., Inc. 5
Flash-Stone Company 90
Flexaust Company, The 79
Flexonics Corporation 10
Flexrock Company 118
Flightex Fabrics, Inc. 73
Force, Wm. A., & Co., Inc. 66
Fort Worth Steel & Machinery Co. 118
Foster, L. B., Co. 12
Foxboro Co. 120
Franke Gear Works, Inc. 80
Frasse, Peter A., & Co., Inc. 19
Fulflo Specialties Co., Inc. 32
Fulton Sylphon Div. Robershaw-Fulton Controls Co. 103

G

Garlock Packing Co. 20
Gast Mfg. Corp. 20
General Box Co. 30
General Control Company 98
General Controls 37
General Electric Co. 87
General Motors Corp. 2
General Plate Div. of Metals & Controls Corp. 53
General Radio Co. 80
General Tire & Rubber Co. 29, 106
Gerrard Steel Strapping Div. 49
Gibson Electric Company 94
Gits Bros. Mfg. Co. 57
Goodrich, B. F., Co. 88
Goodyear Tire & Rubber Co. 86
Gottscho, Adolph, Inc. 98
Graphite Metallizing Corp. 62
Graybar Electric Co., Inc. 33, 89
Gray Company, Inc. 27
Gries Reproducer Corp. 107
Grinding & Polishing Machinery Corp. 16
Grinnell Co., Inc. 47
Guardian Electric 104

H

Haloid Company 39
Hamilton Tool Co. 29, 31, 33
Hammond Machinery Builders, Inc. 97
Handy & Harman 2
Hankison Corp. 84
Hannifin Corp. 105
Hansen, A. L., Mfg. Co. 63
Hansen Mfg. Co., The 44
Hardinge Brothers, Inc. 72
Hardinge Co., Inc. 93
Harper, H. M., Co. 49
Harrington & King Perforating Co. 56
Harris-Barrier, Inc. 109
Hassall, John, Inc. 74
Hazard Insulated Wire Works, Div. The Okonite Company 118
Heinemann Electric Company 103
heinrich Tools, Inc. 107
Hertner Electric Company, The 66
High Standard Manufacturing Corporation, The 48
Hilliard Corporation 39
Hobbs Mfg. Co. 114
Hoffman Engineering Corp. 52
Hollander, Allen, Company 115
Holliday, W. J., & Co., Inc. 104
Homestead Valve Mfg. Co. 28
Honan-Crane Corp. 95
Hood Rubber Company 38
Houdaille-Hershey Corp. 95
Houghton, E. F., & Co. 102
Huot Mfg. Co. 45
Huppert, K. H., Company 34
Hydroway Scales, Inc. 73
Hypro Engineering, Inc. 117

I

Ideal Industries, Inc. 21
Illinois Engineering Co. Div. of American Air Filter Co. 73
Illinois Testing Laboratories, Inc. 46, 80
Imperial Brass Manufacturing Co. 58
Industrial Brownhoist Corp. 99
Industrial Crane & Hoist Corp. 66
Industrial Filtration Company 77
Industrial Products Company 3
Ingersoll-Rand Company 23
Ironbound Box & Lumber Co. 68
Irvington Varnish & Insulator Co. 51
Irwin Auger Bit Company 62
Island Equipment Corporation 104

J

Jaco Devices, Inc. 47
Jaeger Machine Company, The 56
Jari Products, Inc. 69
Jeffrey Manufacturing Co. 24
Jenkins Brothers 48, 106
Johns-Manville 115
Johnson Corporation 8
Johnson Manufacturing Corp. 90
Jones, Howard B., Div., Cinch Mfg. Corp. 29
Jones Motrola Corporation 59
W. A. Jones Foundry and Machine Company 101

K

Kasson Die and Motor Corp. 110
Kato Engineering Company 114
Keller Tool Company 45, 75
Kent Company, Inc. 70
Kester Solder Company 113
Kidde, Walter, & Company, Inc. 2
Kimberly-Clark Corp. 44
Klipfel Valves, Inc. 92
Koby Corporation, The 32
Koehring Company 35
Kritzer Radiant Coils, Inc. 81

L

L & L Manufacturing Co. 48
Labelon Tape Co., Inc. 41
Laminated Shim Company, Inc. 90
Lamson Corporation 71
Lamson Mobilift Corporation 82
Lamson & Sessions Company 51
Lawlor, S. C., Company 72
Leiman Bros., Inc. 20
Lenox Instrument Company 32
Le Roi Company 37
Levin, Louis, & Son, Inc. 6
Lewis-Shepard 50
Libbey-Owens-Ford Glass Co. 75
Lidseen, Gustave, Inc. 97
Linde Air Products Co., A Div. of Union Carbide & Carbon Corp. 6, 115

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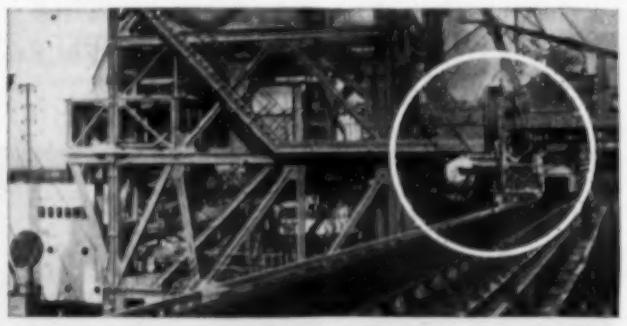

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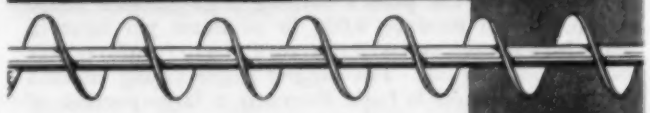

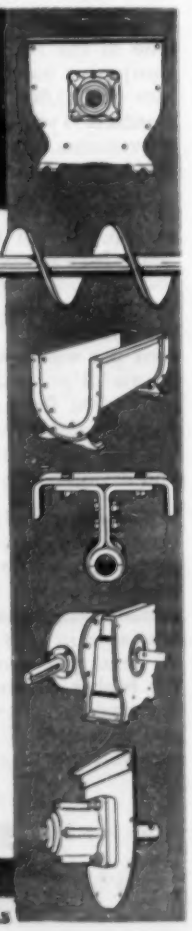

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INDEX TO ADVERTISERS

OCTOBER 1954

Linemaster Switch Corp. 115
Link-Belt Company 19
Littell, F. J., Machine Company ...41
Lockset Screening Company, Inc. ..75
Logan Company 7
Logan Engineering Company ..85, 87
Logansport Machine Co., Inc. 69
Lovejoy Flexible Coupling Co. 5
Lubriplate Division, Fiske Bros. Refining Co. 3
Lufkin Rule Company 64
Lusteroid Container Co., Inc. 86
Lustra Corporation 73

Mc

McCaskey Register Company 18
McDonald, B. F., Company 17
McGill Manufacturing Co., Inc. ..104

M

MB Manufacturing Co., Inc. 95
Machine Products Corp. 65
Madison-Kipp Corporation 27
Magnesium Co. of America 100
Mahon, R. C. Company 14
Mall Tool Company 107
Mamaux, A., & Son 94
Manheim Manufacturing & Belting Co. 70
Manzel Division of Frontier Industries, Inc. 72
Marlin-Rockwell Corporation 48
Marquette Mfg. Co., Inc. 108
Marsh Instrument Company 32
Martindale Electric Company 94
Marx, Clarence J., Company 105
Masonite Corporation 100
Mason-Neilan Regulator Co. 55
Master Specialty Company, Inc. ..57
Mathewson Machine Works 14
Maxim Silencer Company, The ...33
Mead Specialties Company....38, 80
Melrath Supply & Gasket Co., Inc. 74
Mercury Manufacturing Co. 23
Merrill Brothers 55
Metallizing Co. of America 112
Met-L-Wood Corporation 70
Metzgar Conveyor Company 6
Microcard Corporation 20
Micro Metallic Corporation 115
Micro Switch Division Minneapolis-Honeywell Reg. Co. 17
Mid-West Wire Products Co., Inc. 116
Miller Valve Company, Inc. 31
Milton Roy Company 21
Milwaukee Electric Tool Corp. 96
Mine Safety Appliances Company 75, 81
Minnesota Mining & Manufacturing Co. 56
Mitts & Merrill 57
Morris Machine Works 83
Morse Chain Company 97
Motoresearch Company 16
Mueller Brass Company 41

N

Nashua Corporation 74
National Acme Company 36
National Cylinder Gas Co. 86
National Lock Washer Co. 71
National Power Show 36
National Tool Company 109
Newark Wire Cloth Company 85
Newcomb-Detroit 55
Newcomer Products, Inc. 90
New Departure Division 2
New England Oven and Furnace Company 50
New Hermes Engraving Machine Corporation 77
Newman Industries (America), Inc. 110
Newman Manufacturing & Sales Company 56
Nicholson, W. H. & Company 11
Nobur Manufacturing Company ..44
Nolan Company 22
Norgen, C. A., Company 45
Northern Indiana Brass Co. 77
Norton Company 77
Nugent, Wm., & Co., Inc. 108
Nutting Truck & Caster Company..16

O

Oakite Products, Inc. 42
Ohio Knife Company 35
Ohmite Manufacturing Co. 30
Oilgear Company 91
Okonite Company 15, 91
O'Neil-Irwin Manufacturing Co...12
Ortman-Miller Machine Co. 98
Oster Manufacturing Company ...51
Owatonna Tool Company 35
Ozalid Corporation 92

P

Pabco Products, Inc. 92
Pacific Industrial Mfg. Co. 82
Pacific Plastic Products 30
Packless Metal Hose, Inc. 68
Paddock Tool Company 10
Palley Supply Company 4
Peltier Corporation, The 61
Pangborn Corporation 93
Parker-Kalon Div. General American Transportation Corp. 9
Parks-Cramer Company 89
Partlow Corporation 34
Pass & Seymour, Inc. 104
Patent Scaffolding Company, Inc. 109
Pedrick Tool & Machine Co. 88
Peerless Pump Division, Food Machinery & Chemical Corp. ...17
Pennsylvania Flexible Metallic Tubing Company, Inc. 87
Penn Metal Company, Inc. 64
Permaflex Products Company 120
Petersen Manufacturing Co. 32
Philadelphia Gear Works, Inc. ...42
Philadelphia Quartz Company ..111
Phillips Corporation 61
Phillips Manufacturing Co. 107
Phillips Process Co., Inc. 17
Pike, E. W., & Company 55
Pioneer Gen-E-Motor Corporation .79
Pioneer Rubber Company 15
Polymer Corporation of Pennsylvania 66
Porter-Cable Machine Company ..96
Powers Regulator Company 107
Pneu-Trol Devices, Inc. 73
Prater Pulverizer Company 65
Precision Piston Rings, Inc. 84
Pressed Steel Tank Company 23
Pritchard, J. F., Company of California 85
Propellair Division of Robbins and Myers, Inc. 87
Protective Closures Co., Inc. 39
Proto Tools 10
Pulverizing Machinery Div., Metals Disintegrating Company, Inc. ..56

R

R & IE Equipment Division, I-T-E Circuit Breaker Co. 78
R & L Tools 43
Rack Hydraulic Equipment Corp. .118
Rafter Machine Company, Inc. ...10
Ramset Fasteners, Inc. 24
Rapids-Standard Company, Inc. ..83
Rauland-Borg Corporation 53
Raymond Corporation 91, 100
Raytheon Manufacturing Co. ..23, 88
Ready-Power Company 96
Reeves Pulley Company 26
Relay Sales 84
Renton, R. W., and Company 43
Resistoflex Corporation 70
Resolite Corporation 35
Revolvator Company 81
Rhodes, M. H., Inc. 114
Ridge Tool Company 81
Rigidized Metals Corp. 7
Rivett Lathe & Grinder, Inc. 42
Robinson, Edward E., Inc. 61
Rock Island Millwork Company .. 8
Rockford Clutch Division 45
Rock-Tred Corporation 117
Rockwell Manufacturing Co. 54
Rockwood Sprinkler Company .51, 79
Roebling's, John A., Sons Corp. 35, 45
Roll-A-Reel 68
Rome-Turney Radiator Company ..18
Rotary Lift Company 64
Roura Iron Works, Inc. 64
Ruemelin Manufacturing Co. 9
Ruger Cranes. 36

S

SKF Industries, Inc. 109
Safway Steel Products, Inc. 25
Sales Service Machine Tool Co. ..115
Sarco Company, Inc. 13
Sarkes Tarzian, Inc. Rectifier Division 102
Schatz Manufacturing Company ..41
Scherr, George, Company, Inc. 7, 27
Schrader's, A., Son 46, 61
Schramm, Inc. 77
Scovill Manufacturing Co. 46, 61
Seamless Rubber Company 65
Seating, Inc. 20
Segal, Edward 101
Sensenich Corporation 63
Service File Sharpening Co. 105
Service Machine Company, Inc. ..100
Service Recorder Company 50
Severance Tool Industries, Inc. ...54
Sexauer, J. A., Manufacturing Company, Inc. 12
Shakeproof, Division of Illinois Tool Works 77
Sheldon Machine Company, Inc. ..98
Shenango-Penn Mold Company ...72
Sier-Bath Gear & Pump Co., Inc. ..46
Signode Steel Strapping Co. 26
Simmons Fastener Corporation ...58
Simonds Abrasive Company 69
Simpson Electric Company 63
Skil Corporation 116
Smooth-On Manufacturing Co. ...26
Snap-Tite, Inc. 86
South Bend Lathe 37
South Chester Corporation 69
Southern Screw Company 5, 105
Sparks, A. J., & Company 106
Specialty Coatings, Inc. Division of Thompson & Co. 103
Speed Selector, Inc. 58
Spee-Flo Company, The 86
Spence Engineering Company, Inc. 98
Spencer Turbine Company 43
Sprague Electric Company 28
Sprague Engineering & Sales Corporation 48
Spray Engineering Company 23
Sprout-Waldron & Company 60
Square D Company 15, 44
Stackbin Corporation 19
Stackpole Carbon Company 60
Stalwart Rubber Company 110
Standard Industrial Products Company 16
Standard Pressed Steel Company 113, 115, 117
Standard Portable Cord Co., Inc. .82
Standard Steel Spring Division, Rockwell Spring & Axle Co. ...36
Stanley Electric Tools 15
Star Stainless Screw Company ..112
Sta-Warm Electric Company 9
Stearns Magnetic, Inc. 120
Sterling Electric Motors 28
Stewart Warner, Alemite 27, 52
Stitcht, Herman H., Co., Inc. 50
Stonehouse Signs, Inc. 10
Stonhard Company 119
Storm-Vulcan, Inc. 90
Sturtevant Mill Company 101
Sturtevant, P. A., Company 31
Sugar Beet Products Company ...108
Superior Pneumatic & Mfg., Inc. ..52
Superior Tube Company 39
Sweet, H. C., Company 94
Swivelier Company, Inc. 17
Synthane Corporation 47

T

Taber Instrument Corporation 64
Tal Bender, Inc. 6
Taylor Instrument Companies 83
Taylor-Stiles & Company 91
Tempil Corporation 106
Templeton, Kenly & Company 13
Tennant, G. H., Company 61
Thermex Company, Inc. 30
Thermo Electric Manufacturing Company 39
Thomas & Betts Company, Inc. ..111
Thomas Truck & Caster Company 107
Thomson Industries, Inc. 65
Thriftmaster Products Corp. 59
Titan Tool Company 40
Toledo Scale Company 67
Tomic Sales and Engineering Company 7
Tomkins-Johnson Company 79
Torit Manufacturing Company 47
Torrington Company, The 19
Tourek, J. J., Manufacturing Company 53
Tranter Manufacturing Company ..21
Trent, Inc. 16
Trombetta Solenoid Corporation .. 5
Tropical Paint & Oil Company ...43
Truscon Steel Division Republic Steel 6
Tuthill Pump Company 119
Twin Disc Clutch Company 11

U

Union Carbide & Carbon Corp., Bakelite Company 103, 111
Udylite Corporation 25
Union Carbide & Carbon Corp., Linde Air Products Co. 6, 115
Union Special Machine Company .28
Unit Crane & Shovel Corporation .33
United Electric Controls Co. 32
U.S. Electrical Motors, Inc. 102
United States Gauge, Div. American Machine and Metals, Inc. ..99
United States Rubber Co...24, 51, 116
United States Steel Corp. 71
United States Steel Supply Div. ..38
United States Steel 38, 49, 69, 71
United Steel Fabricators, Inc. 99
Universal Engineering Company ..85
Universal Manufacturing Corp. ..62
Uptegraff, R. E., Mfg. Co. 89
Utica Drop Forge and Tool Corp. ..77

V

Valvair Corporation 119
Veeder-Root, Inc. 93
Velocity Power Tool Company ...75
Verson Allsteel Press Company ...11
Vibration Mountings, Inc. 111
Vickers Electric Division, Vickers, Inc. 101
Viking Pump Company 11
Vulcan Electric Company 114

W

Waco Manufacturing Co. 113
Wagner Electric Corporation 15
Ward Leonard Electric Company ..11
Washington Steel Corporation ...54
Waterman Engineering Co. 18
Waterman Products Company, Inc. 80
Wayne Pump Company 8
Webb, Jervis B., Company 14
Webster Instrument, Inc. 46
Wellman Bronze & Aluminum Company 98
West Disinfecting Company 113
Western Chemical Company 81
Western Manufacturing Company .13
Western Precipitation Corp. 26
Westinghouse Air Brake Co. ..37, 74
Westinghouse Electric Corp. 84
Weston Electrical Instrument Corporation 21
Wheelco Instruments Div., Barber-Colman Company 41
Wheel Trueing Tool Company ...103
White, S. S., Dental Mfg. Co. 108
Whiting Corporation 114
Whitney Metal Tool Company ...89
Wickwire Spencer Steel Division of CF & I 34, 88, 94, 110
Wiegand, Edwin L., Company ..5, 11
Wiggins, E. B., Oil Tool Co., Inc. ..30
Williams Gauge Company, Inc....62
Williams, H. R., Mill Supply Co...111
Willson Products, Inc. 37
Wilson Steel and Wire Company ..46
Wing, L. J., Manufacturing Co. ...37
Wire Belt Company of America ..74
Witt Cornice Company 54
Wittek Manufacturing Company ..49
Wood Conversion Company 62
Wood, John, Company 24

Y

Yale & Towne Mfg. Co. 13
"Yankee" Tools—A Division of The Stanley Works 31
Yarnall-Waring Company 14

Z

Zenith Electric Company 20

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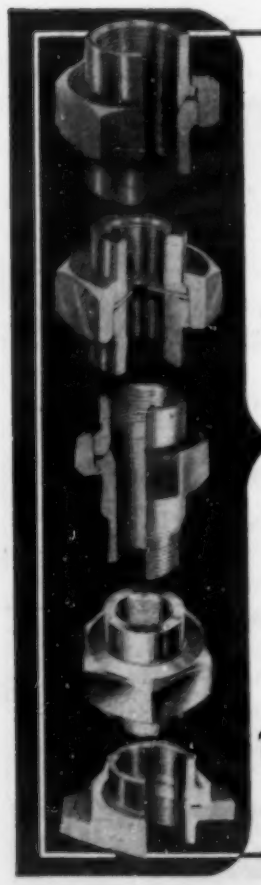

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82-410

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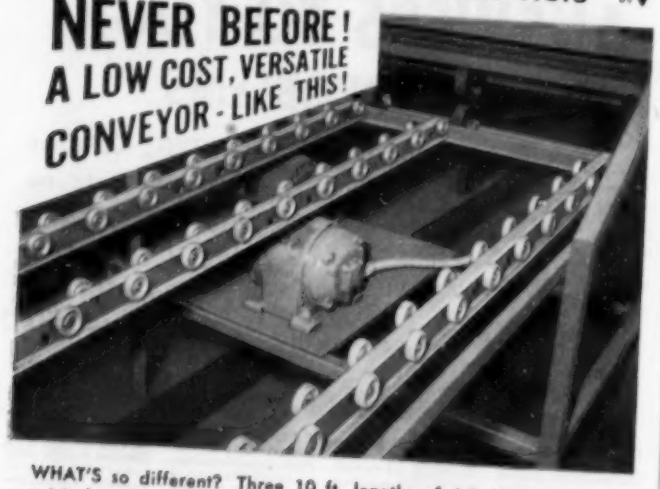

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

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(Please turn to page 117)

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